

**GROUP-BASED SELF-CONTROL:
THE IMPACT OF OPPORTUNITIES TO REACH A GOAL AND
OF SOCIAL IDENTIFICATION**

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1 Introduction and Theoretical Background

Consider a highly identified member of a political party in times of elections. Prior to the election date, and hence prior to the deadline, this member will most likely be involved with a broad range of activities (e.g., distributing information, posting advertisement) and motivating thoughts (e.g., focusing on the importance of the election outcome for the party's future political influence). After the election date, and hence once the deadline has passed, these actions and thoughts may be somewhat different (e.g., focusing on other goals of the party or dwelling on the party's excellent performance in previous elections). Now further consider that this hypothetical member is neither running for office nor is holding a party position that is monetarily compensated. This example nicely illustrates the topic of the current dissertation, namely group-based self-control. It demonstrates that groups can serve as social sources of goals (in this example winning the election), which in turn lead individual members of these groups to consciously self-regulate their behavior and thoughts in lines with these group goals and the deadline phase (pre vs. post) of the group.

The nature of a deadline is determined by a radical loss of opportunities to attain the focal goal. Individuals are subject to these experiences and research has shown that they hold adequate motivational strategies to deal with this (e.g., J. Heckhausen, Wrosch, & Fleeson, 2001). Certainly groups and their members are also subject to deadlines (e.g., Gevers, Rutte, & van Eerde, 2006; Karau & Kelly, 1992; Waller, Conte, Gibson, & Carpenter, 2001; Waller, Zellmer-Bruhn, & Giambatista, 2002). Facing a deadline shapes their action ecology in terms of opportunities for goal pursuit: For example workgroups with a closing date looming ahead of them, soccer teams facing a match determining their league position, or political parties competing in elections.

Whether or not groups are successful in attaining their goals, or in dealing with experiences of failure once these deadlines have passed, for the most part depends on the behavioral and motivational strategies their group members engage in. This is to say that individual group members will have to adequately self-regulate their thoughts and actions

on behalf of the goals of groups they are members of.

Thus, an important question is what strategies group members may employ in this process. So far, such control strategies have not been investigated at the group level. Rather more, the focus in intergroup research has been on investigating social identity management strategies (Tajfel & Turner, 1979; see Excursus below), which serve a very specific goal, namely the regulation of individuals' negative social identities (e.g., Blanz, Mummendey, Mielke, & Klink, 1998). To fill this gap, the current dissertation draws on a model describing self-control strategies in individual pursuit of developmental goals (J. Heckhausen, 1999) and combines it with the social identity approach (e.g., Tajfel & Turner, 1979). In particular, it is investigated whether the self-control strategies suggested by J. Heckhausen (1999) can also be found at the group level and whether their usage is independent of individual outcome considerations. In sum, this dissertation provides first evidence for these self-control strategies operating at the group level as well.

To elaborate on this approach, the dissertation will first turn to a discussion of the life-span theory of control (J. Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996) and the action-phase model (J. Heckhausen, 1999), which provide the theoretical background for a classification of control strategies along with a model pertaining to their usage.

1.1 A Classification of Control Strategies and Control Strategy Usage

With a developmental focus, the life-span theory of control (J. Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996) addresses an individual's ability to control important outcomes (i.e., developmental goals). The theory draws on Rothbaum, Weisz, and Snyder's (1982) distinction of primary and secondary control: Primary control striving refers to an individual's attempt to change the external world in order to bring it in line with personal goals. Contrary, secondary control striving addresses individuals' efforts to influence their inner states (i.e., motivation, emotion, and mental representations). According to J.

Heckhausen and Schulz (1995), successful regulation further comprises the two components of selectivity (e.g., deciding what means to use and what goal to strive for) and compensation (e.g., for failure experiences).

Combining the control processes and demands, five control strategies are distinguished (J. Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996). *Selective primary control* refers to investment of behavioral resources, such as the investment of time and effort. *Compensatory primary control* is necessary when internal resources prove insufficient to attain the chosen goal and involves other people's help or assistance. *Selective secondary control* serves to focus motivational commitment to a chosen goal and to shield it from alternative stimuli. It can therefore be called a meta-motivational or volitional strategy (e.g., the enhancement of the goal value or the anticipation of positive consequences of goal attainment). In case of successful goal striving individuals are assumed to capitalize on this success. However, in the face of failure, *compensatory secondary control* serves two objectives. On the one hand, it fosters *disengagement* from the previous goal. On the other hand, it *protects motivational resources* for the next goal pursuit (e.g., by functional self-protective attributions and both social and intra-individual comparisons). The adaptive value of compensatory secondary control as successful self-regulation when confronted with unattainable goals has been shown in a large body of research (e.g., Wrosch & Heckhausen, 2002; Wrosch, Scheier, Miller, Schulz, & Carver, 2003; Wrosch, Schulz, & Heckhausen, 2002).

The action-phase model (J. Heckhausen, 1999) describes when these control strategies are adaptive in different phases of goal pursuit. It extends the classical Rubicon model (H. Heckhausen, 1991; H. Heckhausen & Gollwitzer, 1987) by including another motivationally relevant transition in the process of goal pursuit apart from the Rubicon (i.e., the point in time when action intentions are formed), namely the deadline. The deadline represents a point in time when the action ecology shifts from a context of goal pursuit marked by high opportunities and low constraints to a context marked by low opportunities and high constraints. Hence, after the deadline action opportunities are no longer available

or radically reduced. Precisely, the deadline is defined as follows: “The deadline for action represents a point in time after which action opportunities in a particular domain are severely curtailed or eliminated” (J. Heckhausen et al., 2001, p. 401). Furthermore, it is stated that “one could also extend the concept of developmental deadlines beyond the time to situational action opportunities in general. Such a general concept might be conceived as a ‘transition to a condition of lost opportunities’ and would include situations when, in the process of goal striving, the external or internal prerequisites for goal attainment are lost” (J. Heckhausen et al., 2001, p. 401, Footnote 1). Accordingly, selective primary, selective secondary, and compensatory primary control are functional in a pre-deadline phase of goal striving, while compensatory secondary control strategies are adaptive in post-deadline phases. Figure 1 gives an overview on the adaptive control strategies before and after passing a deadline.

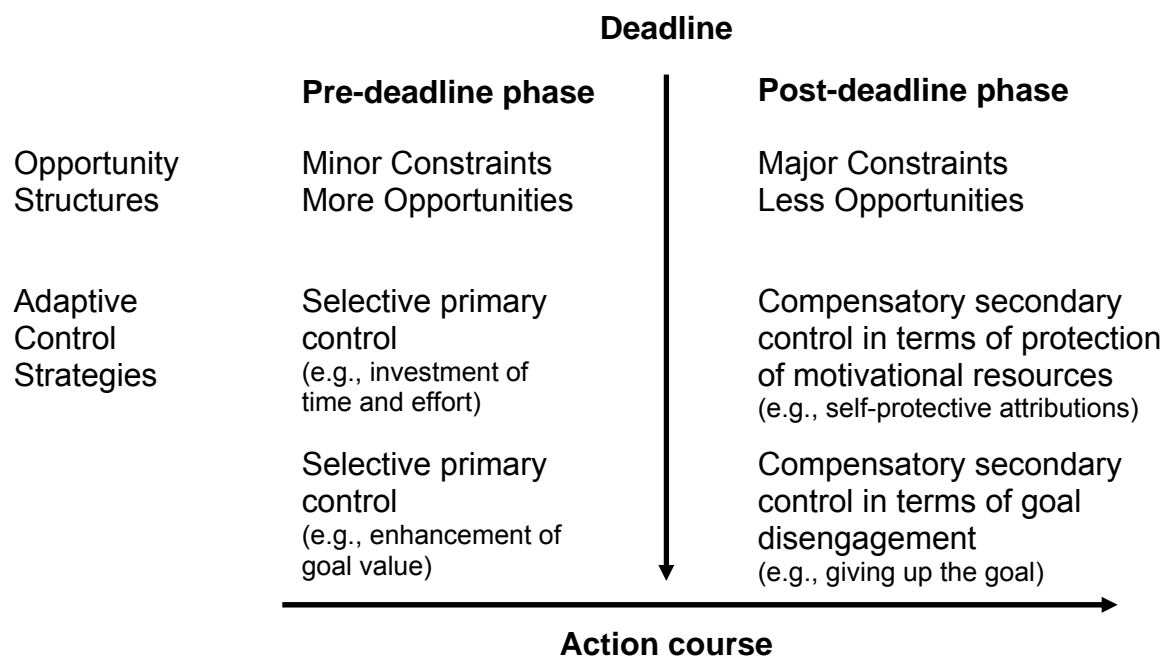


Figure 1. Adaptive control strategies (without Compensatory primary control which is not addressed in the current studies, see below) before and after passing of deadlines according to the action-phase model (adopted from Wrosch & Heckhausen, 1999).

The action-phase model and its respective control strategies have successfully been applied to and received empirical support in various developmental domains, for example childbearing (J. Heckhausen et al., 2001), the transition from school to work (J. Heckhausen & Tomasik, 2002), and relationship goals (Wrosch & Heckhausen, 1999). These studies show that most individuals use control strategies in accordance with opportunities for goal attainment (and those who do so obtain superior outcomes; J. Heckhausen & Tomasik, 2002; Wrosch & Heckhausen, 1999).

In generalizing the theory and applying the action-phase model to the group level by means of integrating it with the social identity approach, the perspective taken in this dissertation is that the control strategies postulated for individual goal pursuit when facing deadlines should also hold for group goals and group deadlines, and thus when the social self is the basis of self-control. However, as the social self involves other ingroup members (Smith, 2002; Turner et al., 1987), the pre-deadline strategy of compensatory primary control (e.g., asking for others' help) would be theoretically redundant at the group level. Furthermore, research in the intergroup domain has shown that outgroup members (who do not form part of the social self) are not likely asked for support due to concerns regarding the ingroups' reputation, either (Täuber & van Leeuwen, 2008; van Leeuwen, Täuber, & Sassenberg, 2006). For both these reasons, compensatory primary control will not be further considered in what follows.

The reasoning that the control strategies should also hold for group goals and group deadlines will be lined out in the following sections by first turning to a discussion on self-regulation at the group level, then to an excursus providing a delineation of the identity management and the control strategies along with a study aimed at clarifying their relation, and finally illustrating the impact of social identification in the proposed process.

1.2 Self-Regulation and Self-Control at the Group Level

Research concerning motivation in (inter-)group settings has predominately focused on specific contents of motivation (or directed motivation in the sense of Kruglanski, 1999), like self-esteem in social identity theory (Tajfel & Turner, 1979) or certainty in uncertainty-identity theory (Hogg, 2007), to give just two examples. However, it has been proposed that research on (inter-)group phenomena might also profit from changing the focus from the content of needs and motives to the process of motivation and thus to self-regulation (Higgins & May, 2001; Smith, 2002). Self-regulation has been defined as “volitional and cognitive processes individuals apply to reach a (subjectively) positive end-state” (Sassenberg & Wolfin, 2008, p. 127; see also Förster, Liberman, & Friedman, 2007). This process-perspective on motivation has already been successfully applied in various domains (for summaries see Baumeister & Vohs, 2004; Boekaerts, Pintrich, & Zeidner, 2000).

Research addressing this motivational process-perspective at the group level has successfully demonstrated that group members self-regulate based on their social identity (and thus that group-based self-regulation as a phenomenon exists), which in turn has been shown to have implications for a large range of intergroup phenomena (for an overview, see Sassenberg & Wolfin, 2008). At the same time, however, most studies have applied very specific approaches to self-regulation, namely self-discrepancy theory (Higgins, 1987) and regulatory focus theory (Higgins, 1997). In showing that these self-regulation theories also apply to the regulation of the social self, these studies have addressed spontaneous rather than controlled group-based self-regulation (cf. Förster et al., 2007, for a distinction).

The current dissertation adds on to this research by investigating group-based *self-control*: The conscious engagement and self-regulation of group members on behalf of group goals in terms of specific behavioral and mental strategies that are functional in different phases of group goal striving. At the same time, the current perspective differs from research on groups that has so far used the term control in several other meanings than

defined here. Aspects of control have been treated as sanctioning expected by the outgroup (e.g., Hertel, Aarts, & Zeelenberg, 2002), as subjective control resulting from ingroup norms (e.g., Marques, Páez, & Abrams, 1998), as perceived individual control over the social setting (e.g., Abrams, Hinkle, & Tomlins, 1999), in terms of loss of individual control impacting on group phenomena (Fritsche, Jonas, & Franhänel, in press), or as control being attributed to the ingroup (e.g., Karau, Markus, & Williams, 2000).

In sum, there is clear evidence for rather spontaneous self-regulatory processes and outcomes of these processes being present at the group level (cf. Sassenberg & Woltin, 2008). However, these lines of research did not address the role of controlled self-regulation (i.e., self-control) and opportunity structures in the action ecology (such as deadlines) impacting on self-control strategy usage.

1.3 Excursus: The Relation Between Control and Identity Management Strategies

Rather than in terms of deadlines, the structure of an intergroup situation and thus each group's action ecology has been addressed in terms of socio-structural variables and their impact on the so-called social identity management strategies (Tajfel & Turner, 1979). It thus seems appropriate and necessary to relate these strategies and the control strategies under investigation in the current dissertation to each other. The aim of the following excursus is to provide a theoretical account and empirical evidence for the fact that, albeit to some extent related, these identity management strategies differ from the control strategies suggested by J. Heckhausen (1999).

According to social identity theory the disadvantaged or inferior position of one's group will lead to a threatened or negative social identity (Tajfel & Turner, 1986, p. 19). This is assumed to result in attempts to improve one's status. The perception of the intergroup situation in terms of socio-structural characteristics (i.e., stability and legitimacy of group status and permeability of group boundaries) is in turn assumed and has been shown to lead to a preference for particular identity management strategies (e.g., Ellemers, van Knippenberg, de Vries, & Wilke, 1988; Ellemers, van Knippenberg, & Wilke, 1990; Ellemers, Wilke, & van Knippenberg, 1993; Mummendey, Kessler, Klink, & Mielke, 1999a; Mummendey, Klink, Mielke, Wenzel, & Blanz, 1999b; cf. also Wright, Taylor, & Moghaddam, 1990; see Ellemers, 1993, for an overview). Thus, these strategies are *functional in terms of regulating one's negative social identity* (e.g., Hogg & Abrams, 1988; Blanz et al., 1998). Even more precisely, they are all related to the overall goal of (re)gaining a positive social identity and thus content-specific. Following Tajfel and Turner (1979), three categories of such identity management strategies may be distinguished: a) individual strategies (e.g., individual mobility – leaving the group), b) collective strategies (e.g., social competition – gaining the same status as the outgroup or even reversing the status relation), and c) creative strategies (e.g., reevaluation of the comparison dimension – devaluing the comparison dimension as less important).

Contrary to the social identity management strategies, the control strategies suggested by J. Heckhausen (1999) are not bound to a specific content. Rather more, they may serve

any group goal differently depending on the deadline situation of group. They are thus *functional in terms of group goal striving* and illustrate group members' reactions to their group having a goal.

However, despite their difference in functionality and content specificity, these strategies are nonetheless both related to overall group-based interests. The following study investigates their communalities and differences in order to clarify their relations.

1.3.1 Overview and Hypotheses Study 1

This study was conducted to address two research questions. The first aim of the study comprised the investigation of the relation between the control strategies proposed by the life-span theory of control (J. Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996) and within the action-phase model (J. Heckhausen, 1999) and the identity management strategies suggested by social identity theory (e.g., Tajfel & Turner, 1979, 1986). Instead of addressing all identity management strategies proposed in the literature on social identity theory and social comparison theory (for an overview and taxonomy on a total of 12 strategies of identity management see Blanz et al., 1998), this study focuses on the most prominent identity management strategies as proposed by Tajfel and Turner (1979) and investigated by Mummendey et al. (1999a): individual mobility, social competition, realistic competition, preference for temporal comparison, and reevaluation of comparison dimension.

The second aim of this study was to investigate the relation between a group's deadline phase and both the control strategies as well as the identity management strategies. This is to say, the study was conducted to show that the individual level control strategies also hold for the group level where the social self is the basis of action and that they are also affected by group deadlines as proposed by the action-phase model. Concerning the impact of a group deadline on the identity management strategies this study was exploratory (this also holds for the relation of deadline phase, identity management strategies, and control strategies).

Concerning the relation between social identity management strategies and the control strategies and thus addressing the first aim of the study, it is hypothesized that the identity management strategies of social and realistic competition and the pre-deadline control strategies of selective primary and selective secondary control will be positively related to each other, as all these strategies imply goal engagement on behalf of the group. As to the relation between social and realistic competition and the control strategy of compensatory secondary control in terms of protection of motivational resources, conflicting hypothesis can be derived. On the one hand they may be positively related as all these strategies require an element of comparing one's ingroup to an outgroup. On the other hand, as competition only seems warranted when opportunities are still at hand (i.e., in pre-deadline phases), assuming no (or even a negative) relation between these strategies pertaining to different deadline phases is also plausible. However, social and realistic competition should not (or merely negatively) be related to compensatory secondary control in terms of goal disengagement, as group goal disengagement is incompatible with engagement in intergroup competition.

The identity management strategies of reevaluation and preference for temporal comparisons comprise an element of protection of one's social identity (e.g., Blanz et al., 1998; Tajfel & Turner, 1979) and are usually engaged in when facing unfavorable and unchangeable conditions for one's group. Consequently, these identity management strategies should be positively related to the post-deadline control strategies (as both are functional in unfavorable and unchangeable conditions) and negatively to the pre-deadline control strategies (which are functional when opportunities for change still exist). Finally, the identity management strategy of individual mobility implies disengagement from the group. It should therefore not be related to either the pre- or the post-deadline control strategies, as they pertain to group goal pursuit in different deadline phases.

Within the life-span theory of control (J. Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996) and the action-phase model (J. Heckhausen, 1999) a deadline for reaching a goal is conceptualized as a shift in the action ecology from a context marked by high opportunities to a context marked by low opportunities. Addressing the second aim of this study, it is consequently and in line with the action-phase model expected that higher

levels of perceived opportunities for group goal attainment (resembling a pre-deadline phase) will go along with higher levels of the pre-deadline strategies of selective primary and selective secondary control and lower levels of the post-deadline strategies of compensatory secondary control in terms of protection of motivational resources and of goal disengagement. Regarding the relation between the perceived opportunities and the identity management strategies no clear hypotheses can be derived. However, as social and realistic competition both involve group goal engagement, they can be expected to be positively related to perceived opportunities for group goal attainment. Contrary, as reevaluation and temporal comparisons involve processes of motivational protection when change is unlikely, they should be negatively related to perceived opportunities. Finally, as individual mobility is not a collective strategy, it should not be related to the perception of the group's opportunities (i.e., to the perception of the group's deadline).

In addition it seems plausible to assume that the identity management strategies related to intergroup competition (i.e., social and realistic competition) imply the specific goal of being better than an outgroup in an intergroup context marked by negative interdependence between groups. As social and realistic competition convey this goal, they may be expected to mediate the proposed relation between the group's deadline phase (measured in this study) and the usage of pre-deadline control strategies in such contexts. Stated differently, the pre-deadline control strategies may be regarded as means to obtain the goal implied by these identity management strategies.

These hypotheses were tested in a correlational study in which participants' perception of their group's opportunities to reach the group goal were measured as a proxy for their perception of the group's deadline phase (i.e., high perceptions of opportunities implying a pre-deadline phase, low perceptions implying a post-deadline phase).

1.3.2 Method

Design and participants

A correlational study in which the extent to which students of the Friedrich-Schiller-University Jena perceived their university to have chances and opportunities (i.e., the group's deadline status) in its application for funding within the Excellence Initiative¹ as quasi-experimental factor was conducted. The control strategies as well as the social identity management strategies served as dependent variables. A total for 95 students were recruited on campus and participated in this study for which they received 1 € as compensation. Their mean age was 22 years (range 18 to 32) and 49 were female.

Procedure

Participants were approached on campus. They were informed that the study was a survey on students' opinion concerning the Excellence Initiative. Furthermore, participants read a short text providing them with background information on the overall funding budget, the number of universities applying, benefits for universities and students in general and for the Friedrich-Schiller-University and its students in particular, and on how students could support the university in the application process. Subsequently participants filled in the scales measuring their perception of opportunities, the self-control strategies, the identity management strategies, and provided socio-demographic information. Finally, participants were thanked, debriefed, and compensated.

Measures

Deadline perception. On 7-point scale ranging from 1 (= *not at all*) to 7 (= *very much*) participants had to indicate on two items to what extent they believed that the Friedrich-Schiller-University Jena still had chances of being successful in attaining the Excellence Initiative funding (e.g., "Based on what you currently know about the Excellence Initiative, to what extent do you think that the University still has chances of

¹ The federal government of Germany and the German federal states launched the Excellence Initiative in 2005 (i.e., the year this study was conducted in) with the aim to promote top research in Germany. The overall funding of almost 2 billion € is dedicated to graduate schools, excellence clusters, and so-called 'future-concepts' of universities that successfully apply.

being successful?”). These items correlated in the expected manner, $r(95) = .78, p < .001$. They were thus summarized so that higher values indicate perceiving more opportunities (i.e., resembling a pre-deadline phase).

Control strategies. Group-based primary and secondary control was assessed with a group-based version of the Optimization with Primary and Secondary Control Scales (OPS scales; Heckhausen, Schulz, & Wrosch, 1998) adapted to the context of the Excellence Initiative. Participants rated the extent to which each item applied to them personally on a 5-point scale ranging from 1 (= *does not apply*) to 5 (= *completely applies*). Overall, four control strategies were assessed. *Selective primary control* (SPC; the first pre-deadline strategy) was assessed with four items (e.g., “I will show a lot of effort in order to support the Friedrich-Schiller-University Jena’s application within the Excellence Initiative”, $\alpha = .80$). *Selective secondary control* (SSC, the second pre-deadline strategy) was also assessed with four items (e.g., “While supporting the FSU Jena in its application for the Excellence Initiative, I will often remind myself of the advantages and benefits for the university in case of success”, $\alpha = .85$). *Compensatory secondary control in terms of protection of motivational resources* (CSCprot; the first post-deadline strategy) was measured using six items (e.g., “If the Excellence Initiative of the Friedrich-Schiller-University does not lead to success, I will remind myself that we are off far better than other universities in many other domains”, $\alpha = .66^2$). Finally, *Compensatory secondary control in terms of goal disengagement* (CSCdis; the second post-deadline strategy) was measured with one item (“If in the process of the Excellence Initiative the difficulties turn out to be invincible, I will look for a different domain in which I can get engaged”). Because pre-testing revealed that students perceived the questionnaire as rather long and tiring and because goal disengagement is the most straightforward of the control strategies, this strategy was measured with one item only in order to keep the questionnaire at a tolerable length.

² The fact that the reliability of this scale is relatively low stems from the fact that it is very heterogeneous (i.e., assessing self-protective attributions as well as self-protective social and temporal comparisons). J. Heckhausen et al. (2001, p. 408), applying this scale to the context of the goal of having a child before the age of 40, report an alpha of .39 for CSC in general and note: “...the Compensatory Secondary Control scale includes different subsets of strategies ... that are functionally complementary but therefore also may serve as substitutes for each other in different individuals, thus bringing about a relatively low scale consistency.”

Identity management strategies. Overall, five identity management strategies with items adapted to the context of the current study from Mummendey et al. (1999a) were assessed. The collective and individual behavioral strategies of social and realistic competition as well as individual mobility were all assessed on 5-point scales ranging from 1 (= *do not agree at all*) to 5 (= *completely agree*). Specifically, *social competition* was assessed with three items (e.g., “We from the FSU Jena will show other universities that we are much more qualified for receiving funding by the Excellence Initiative”, $\alpha = .77$). *Realistic competition* was also assessed with three items (e.g., “When the funding within the Excellence Initiative is distributed in a few months, we from the FSU Jena should make sure that this funding is granted to us rather than to other universities”, $\alpha = .71$). Finally, *individual mobility* was assessed with three items as well (e.g., “In case of no success in the Excellence Initiative it would be attractive for me to change to a different university”, $\alpha = .95$). Furthermore, two strategies of social creativity were based on single indicators computed from scales ranging from 1 (= *of no importance*) to 5 (= *very important*). Preferring comparison on a new comparison dimension and thus *reevaluation* of the comparison dimension was measured by computing the maximum difference between participants’ importance attached to the dimension of acquired funding compared to a) the dimension of sociability, b) the dimension of quality of teaching, and c) the dimension of self-realization at the university. Preferring comparison with other times and thus preference for *temporal comparisons* was computed by the difference (a – b) between the following items: a) “How important is the comparison of the Friedrich-Schiller-University’s reputation today compared to prior to the Excellence Initiative to you?”, b) “How important is the comparison between the Friedrich-Schiller-University and other universities applying for the Excellence Initiative to you?”.

1.3.3 Results

Interrelation between identity management strategies and control strategies

Both social and realistic competition assessed aspects related to the intergroup situation marked by negative interdependence between the Friedrich-Schiller-University and other universities and thus aspects pertaining to the group goal of gaining funding. Thus, as expected, they correlated with nearly all control strategies (see Table 1). Specifically, social competition was positively related to selective primary control, $r(95) = .67, p < .001$, to selective secondary control, $r(94) = .71, p < .001$, and to compensatory secondary control in terms of protection of motivational resources, $r(95) = .38, p < .001$. Contrary to expectations, it was also positively related to compensatory secondary control in terms of goal disengagement, $r(95) = .23, p < .05$. This is most likely due to the fact that rather than addressing complete goal disengagement, the item measured goal reengagement in a different domain (see item description above), which can still imply competing with an outgroup. In line with expectations, realistic competition was positively related to selective primary control, $r(95) = .50, p < .001$, to selective secondary control, $r(94) = .52, p < .001$, and to compensatory secondary control in terms of protection of motivational resources, $r(95) = .23, p < .05$. It is important to note that correlations for both collective behavioral strategies are higher with the pre-deadline control strategies of selective primary and selective secondary control than with the post-deadline strategies of compensatory secondary control in terms of protection of motivational resources and goal disengagement (all $z_s > 3.10$, all $p_s < .05$). This may be taken as an indicator that social and realistic competition are more adaptive in pre-deadline phases of goal striving. Also in line with expectations, the social creativity strategy of reevaluation was negatively related to both pre-deadline strategies, namely selective primary control, $r(95) = -.23, p < .05$, and selective secondary control, $r(94) = -.26, p < .05$. As expected, individual mobility was not related to any of the control strategies, all $|r_s| < .15$, all $p_s > .15$. However, contrary to expectations preference for temporal comparisons was neither positively related to the post- nor negatively related to the pre-deadline control strategies, all $|r_s| < .16$, all $p_s > .14$.

Table 1.

Interrelations Between the Identity Management and the Control Strategies (N = 95)

	SPC	SSC	CSCprot	CSCdis
1. Social competition	.67***	.71***	.38***	.23*
2. Realistic competition	.50***	.52***	.23*	.15
3. Individual mobility	.14	.08	-.04	.00
4. Reevaluation	-.23*	-.26*	-.14	.06
5. Temporal comparison	-.05	-.05	-.15	-.08

Note. SPC = selective primary control; SSC = selective secondary control; CSCprot = compensatory secondary control in terms of protection of motivational resources; CSCdis = compensatory secondary control in terms of goal disengagement.

* $p < .05$. ** $p < .01$. *** $p < .001$.

The influence of deadline perception on control and identity management strategies

It was assumed that participants' perception of their group's deadline phase (i.e., the opportunities vs. constraints for the Friedrich-Schiller-University to attain funding within the Excellence Initiative) would be positively related to the phase-congruent usage of control strategies. Correlations were conducted to test this (for an overview, see Table 2).

The perception of the deadline (i.e., opportunities for group goal attainment) was indeed positively related to the pre-deadline strategies of selective primary control (SPC), $r(95) = .35, p < .01$, and selective secondary control, $r(94) = .39, p < .001$. Thus, in line with the action-phase model and expectations, higher perceptions of opportunities went along with higher self-reported engagement in terms of these strategies. However, unexpectedly a positive relation between the perception of the deadline and the post-deadline strategy of compensatory secondary control in terms of protection of motivational resources (CSCprot) emerged, $r(95) = .29, p < .01$. The positive relation indicates that in the current study protecting motivational resources seems to be a control strategy engaged in prior to a deadline. Most likely, this is due to the specific intergroup context marked by intergroup

competition requiring motivational resource protection. Finally, concerning the last post-deadline strategy of compensatory secondary control in terms of goal disengagement (CSCdis), no relation to the perception of the deadline was found, $r(95) = -.02$, $p = .858$.

Overall, evidence for the expected positive relation between the perception of the deadline and the pre-deadline strategies was found (i.e., larger perception of opportunities went along with more reported adequate strategy usage). The likewise positive relation for the post-deadline strategy of compensatory secondary control in terms of protection of motivational resources was not expected, but may be explained by a sense of urgency present in the intergroup competition (see Discussion).

In order to also explore the relation between the deadline perception and the social identity management strategies, correlations for these strategies were also computed (see Table 2). A similar pattern of results as for the control strategies was found for social and realistic competition (i.e., the two collective behavioral identity management strategies). Specifically, both social competition, $r(95) = .50$, $p < .001$, and realistic competition, $r(95) = .46$, $p < .001$, were positively related to perceiving larger opportunities for group goal attainment (i.e., resembling a pre-deadline phase).

For the individual mobility and for the social creativity strategy of preference for temporal comparisons no significant relation with the deadline perception emerged (both $|rs| < .06$, both $ps > .55$). However, as expected the deadline perception was negatively related to reevaluation, $r(95) = -.21$, $p < .05$. From the perspective of the action-phase model this finding indicates that using reevaluation to gain a positive social identity is the less needed, the more the group is being perceived as having opportunities in its goal striving (i.e., being in a pre-deadline phase).

Taken together, the results concerning the identity management strategies indicate that social and realistic competition were engaged in to a larger extent and reevaluations were indicated to a lesser extent, with participants also perceiving their group to be in a pre-deadline phase of goal striving to a larger extent (i.e., perceiving more chances of success in gaining funding).

Table 2.

Correlations of the Control Strategies and the Identity Management Strategies with the Deadline Perception (N = 95)

	Control Strategies				Social Identity Management Strategies				
	SPC	SSC	CSC prot	CSC dis	Social Comp.	Real. Comp.	Ind. Mob.	Re- eval.	Temp. Comp.
Deadline perception	.35**	.39***	.29**	-.02	.50***	.46***	.06	-.21*	-.04

Note. SPC = selective primary control; SSC = selective secondary control; CSCprot = compensatory secondary control in terms of protection of motivational resources; CSCdis = compensatory secondary control in terms of goal disengagement; Social Comp. = Social Competition; Real. Comp. = Realistic Competition; Ind. Mob. = Individual Mobility; Re-eval. = Reevaluation; Temp. Comp. = Temporal Comparison.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Mediation Analyses

The control strategies were assumed to serve as a means to attain goals implied by the social identity strategies of social and realistic competition. In other words, the relation between the deadline perception and control strategy usage was expected to be mediated by social and realistic competition, because both these collective behavioral strategies imply the goal to be better than other universities and thus to attain the governmental funding. To test whether the perception of the deadline indeed influenced control strategy usage through social and realistic competition, several mediation analyses were conducted on the four dependent control strategy measures according to the method discussed by Baron and Kenny (1986). This implied conducting three regression analyses of (a) the initial variable on the criterion variable (Step 1), (b) the initial variable on the mediator (Step 2), and finally (c) the mediator on the criterion variable while controlling for the impact of the initial variable (Step 3). A variable is regarded as mediating when both the first and the second regressions are significant and the third regression indicates a significant effect of the mediator variable while at least partially reducing the effect of the initial variable. For all analyses below bootstrapping according to the suggestions made by Preacher and Hayes

(2004) was used and the syntax file suggested by the same authors³ was deployed.

In the first analysis (see Table 3), the mediation by social competition of the effect of the deadline perception on the first pre-deadline strategy (i.e., selective primary control; SPC) was investigated. In the first step there was a significant effect of the deadline perception on SPC ($\beta = .21, p < .001$). Likewise, in the second step a significant effect of the deadline perception on social competition ($\beta = .33, p < .001$) emerged. When including both the deadline perception and social competition in an analysis with SPC in the third step, a significant effect of social competition on SPC ($\beta = .60, p < .001$) emerged. Also, the original effect of deadline perception on SPC disappeared ($\beta = .01, p = .812$), and the indirect effect ($\beta = .19$) was indeed significantly different from zero ($CI_{\alpha = .05} = [.12; .27]$). Thus, social competition mediated the effect of the deadline perception on selective primary control.

The second mediation analysis (for details see Table 3) tested whether social competition also mediated the effect of the deadline perception on the second pre-deadline strategy (i.e., selective secondary control; SSC) and found this to be the case with the indirect effect ($\beta = .25$) being significantly different from zero ($CI_{\alpha = .05} = [.16; .35]$).

The following mediation analysis (for details see Table 3) tested the mediation by social competition of the impact of the deadline perception on the first post-deadline strategy (i.e., compensatory secondary control in terms of protection of motivational resources; CSCprot). Again, results indicate that social competition indeed mediated this effect with the indirect effect ($\beta = .08$) being barely, albeit significantly different from zero ($CI_{\alpha = .05} = [.03; .15]$).

The next mediation analysis should have examined whether social competition also mediated the effect of the deadline perception on compensatory secondary control in terms of goal disengagement (i.e., the second post-deadline strategy; CSCdis). However, as the correlational analysis above already indicated that there was no relation between the deadline perception and this strategy (meaning that Step 1 was not fulfilled) this mediation was not further explored.

³ <http://www.comm.ohio-state.edu/ahayes/sobel.htm>

Table 3.

Mediational Regression Analyses with Betas and Significance Levels for the Mediator Social Competition and the Control Strategies (N = 95)

Control Strategy	Predictor	Step 1 DV = Control Strat.	Step 2 DV = Soc. Comp	Step 3 DV = Control Strat.
SPC	Deadline perception	.21***	.33***	.01
	<i>Social Competition</i>			.60***
SSC	Deadline perception	.28***	.33***	.01
	<i>Social Competition</i>			.76***
CSCprot	Deadline perception	.15**	.33*	.07
	<i>Social Competition</i>			.24**

Note. DV = dependent variable; Strat. = Strategy; Soc. = Social; SPC = selective primary control; SSC = selective secondary control; CSCprot = compensatory secondary control in terms of protection of motivational resources; italics = mediator.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Turning to the second proposed mediator, the fourth mediation analysis investigated the mediation by realistic competition of the effect of the deadline perception on selective primary control (SPC; see Table 4). The perception of the deadline had a significant impact on SPC ($\beta = .21$, $p < .001$; Step 1) and on the proposed mediator realistic competition ($\beta = .28$, $p < .001$; Step 2). When the deadline perception and realistic competition were included in Step 3, there was a significant effect of realistic competition on SPC ($\beta = .41$, $p < .001$) while the original effect of deadline perception on SPC was reduced ($\beta = .09$, $p = .122$) and the indirect effect ($\beta = .11$) was significantly different from zero ($CI_{\alpha = .05} = [.05; .19]$). Thus, realistic competition mediated the effect of the deadline perception on SPC.

The fifth mediation analysis (for details see Table 4) examined whether realistic competition also mediated the effect of the deadline perception on selective secondary control (SSC; the second pre-deadline strategy). This was the case with the indirect effect

($\beta = .15$) being significantly different from zero ($CI_{\alpha = .05} = [.06; .23]$).

Subsequently mediation analyses with realistic competition for the post-deadline strategies were also run. The sixth mediation analysis (for details see Table 4) investigated if realistic competition mediated the effect of the deadline perception on compensatory secondary control in terms of protection of motivational resources (CSCprot; the first post-deadline strategy). In the first step of this sixth analysis a significant effect of the deadline perception on CSCprot ($\beta = .15, p < .01$) occurred. Step 2 in this analysis was identical to Step 2 in the fourth and fifth mediational analyses ($\beta = .28, p < .001$) and thus satisfied in the above analyses. However, when including both the deadline perception and realistic competition in an analysis with CSCprot in the third step no significant effect of realistic competition on CSCprot ($\beta = .10, p = .281$) emerged and the original effect of deadline perception on CSCprot was not reduced ($\beta = .12, p < .05$). Also, the indirect effect ($\beta = .03$) was not significantly different from zero ($CI_{\alpha = .05} = [-.03; .09]$). Thus, realistic competition did not mediated the effect of the deadline perception on compensatory secondary control in terms of protection of motivational resources.

The final mediation analysis should have investigated whether realistic competition mediated the effect of the deadline perception on compensatory secondary control in terms of goal disengagement (i.e., the second post-deadline strategy; CSCdis). However, as the correlational analysis above already indicated that there was no relation between the deadline perception and this strategy (meaning that Step 1 was not fulfilled) this mediation was not further explored.

Table 4.

Mediational Regression Analyses with Betas and Significance Levels for the Mediator Realistic Competition and the Control Strategies (N = 95)

Control Strategy	Predictor	Step 1 DV = Control Strat.	Step 2 DV = Real. Comp	Step 3 DV = Control Strat.
SPC	Deadline perception	.21***	.28***	.09
	<i>Real. Competition</i>			.41***
SSC	Deadline perception	.28***	.28***	.13 ⁺
	<i>Real. Competition</i>			.52***
CSCprot	Deadline perception	.15**	.33*	.12*
	<i>Real. Competition</i>			.10

Note. DV = dependent variable; Strat. = Strategy; Real. = Realistic; SPC = selective primary control; SSC = selective secondary control; CSCprot = compensatory secondary control in terms of protection of motivational resources; italics = mediator.

⁺ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Overall, the results of the mediational analyses indicated that as expected social and realistic competition mediated the effects of the deadline perception on both pre-deadline strategies, namely selective primary and selective secondary control. Concerning the post-deadline strategies evidence was found for a mediation of the effect of the deadline perception on compensatory secondary control in terms of protection of motivational resources (CSCprot) by social competition. This unexpected finding may stem from the fact that both social competition and CSCprot involve comparisons with an outgroup: Social competition specifies the goal in determining that the ingroup will show the outgroup that it is much more qualified while some aspects of CSCprot refer to means of doing so. Furthermore, as noted above, in the context of this study CSCprot seems to have been a functional strategy in the pre-deadline phase of group goal striving.

1.3.4 Discussion

This first study assessed the control strategies suggested by the action-phase model (J. Heckhausen, 1999) for individual goal pursuit in pre- vs. post-deadline phases at the group level. The reliability of the control scales and the overall pattern of results indicate that these strategies indeed also hold for the group level, where the social self is the basis of action.

The first aim of this study was to explore the relation between these control strategies and the so-called social identity management strategies (e.g., Tajfel & Turner, 1979). Most hypotheses were supported. Specifically, the collective behavioral identity management strategies were related to selective primary and secondary control, indicating that these strategies imply overall engagement on behalf of the group. This notion is further strengthened by the higher correlation between these identity management strategies and the pre-deadline compared to the post-deadline control strategies (the latter assumed to be more adequate after the deadline has passed and thus when goal disengagement seems warranted). The fact that these identity management strategies also, albeit much weaker, correlated with compensatory secondary control in terms of protection of motivational resources most likely stems from the fact both strategies involve aspects of social comparisons. To this point, Mummendey et al. (1999a) point out that one needs to distinguish between social comparisons aiming at gaining information about one's social standing and the strategic use of social comparisons to demonstrate one's superiority. The positive correlations in the current study are most likely due to the latter. In line with expectations individual mobility did not correlate with any of the control strategies (which all imply one's group serving alignment in different deadline phases). As assumed, reevaluation was negatively related to pre-deadline strategies. The fact that no significant correlations were obtained for the social creativity strategy of temporal comparisons might be due to this strategy being measured very differently than the other strategies (i.e., by means of difference score based on the endorsement of two statements)⁴. Future research

⁴ However, Mummendey et al.'s (1999a) findings indicated that for their sample (i.e., East Germans) temporal comparisons were also not predicted by the social structural variables.

should rule out the possibility that the lack of a relation in this study is merely due to a measurement problem.

Most of the hypotheses concerning the second aim of this study, namely to investigate the relation between a group's deadline phase and both the control strategies as well as the identity management strategies, were also supported: The perception of the group's deadline in terms of opportunities for goal attainment indeed went along with self-reported engagement in selective primary and selective secondary control. The unexpected positive correlation with compensatory secondary control in terms of protection of motivational resources was explained as stemming from the intergroup competition specific to the context of this study, namely for governmental resources. This may have elicited a feeling of urgency. In line with this reasoning, Heckhausen et al. (2001, p. 411) also note that urgent pre-deadline individuals "might very well require self-protective strategies of compensatory secondary control after a failed attempt to reach a goal". The findings pertaining to the influence of the deadline perception on the social identity management strategies were all in line with expectations with the exception of the lack of a relation with temporal comparisons. As mentioned before, it cannot be ruled out that this is simply due to this strategy being assessed in a different manner than the other strategies.

In this study group members' perception of their group's opportunities were assessed as a proxy for their perception of their group's deadline phase. Due to the correlational nature of this study, conclusions regarding a causal relation between the group's deadline phase and control strategy usage can not be derived. Thus, the remaining studies of this dissertation will manipulate the groups' deadline phase in order to address this limitation. Manipulating the groups' deadline phase may also allow for more warranted conclusions regarding its impact on post-deadline control strategy usage for which this study did not provide support. A further limitation of this study is that the group goal (i.e., gaining governmental funding) was not closely tied to the social category (i.e., students of the University of Jena). For example, Jetten, Spears, and Manstead (1997) manipulated group norms (fairness or discrimination, and hence the goal of being fair or of discriminating) and focused on their effect on students' actual behavior. Their lack of results for the fairness norm condition is likewise explained by the weak connection between categorization (as

students) and the group norm (fairness) in their intergroup context. In all following studies of this dissertation care was thus taken that the group goal was indeed connected to the respective social category.

The reasoning that as social and realistic competition imply a group goal relevant to the context of the current study (namely being better than other universities and thus obtaining governmental funding) and that they should thus mediate the relation between the perception of the group's deadline phase (in terms of opportunities) and the pre-deadline control strategies of selective primary and selective secondary control was supported. Unexpectedly, social competition also mediated the effect of the deadline perception on compensatory secondary control in terms of protection of motivational resources. However, as explained above, the overall pattern of results indicates that in the context of the present study this strategy seems to have served as a pre-deadline, rather than a post-deadline strategy, due to the urgency of the intergroup competition: Participants still perceiving opportunities nonetheless engaged in self-protective attributions and self-serving social comparisons. Most likely this served as a means to derive further motivational potential for group goal striving rather than as a motivational protection after the deadline having passed with failure as an outcome of the intergroup competition. Future research should thus clarify what contextual features contribute to compensatory secondary control serving as either a pre- or a post-deadline strategy.

Finally, and most importantly, this study clarified the relation between the identity management and the control strategies. It is of particular importance to note that despite the fact that the identity management strategies and the control strategies were correlated in this study and thus share common features, they nonetheless serve different functions. This is indicated by the mediational relation between the deadline perception, the mediators social and realistic competition, and the control strategies. What can be drawn from these analyses is that the identity management strategies (e.g., Tajfel & Turner, 1979) are functional in terms of regulating one's social identity. They are thus content specific. Social and realistic competition specify the goal of being better than an outgroup and goal attainment is fulfilled by a more positive social identity. Contrary, the control strategies suggested by the action-phase model (J. Heckhausen, 1999) are functional in terms of

group goal striving and in turn not bound to a specific content. Consequently, they illustrate group members' behavioral and cognitive reactions to their group having a goal. This goal may be having a positive social identity – but this is not the only possible goal. Stated differently, the control strategies serve as means for dealing with group goals in different deadline phases and the social and realistic competition may specify such a goal.

Having shown that the social identity management and the control strategies indeed serve different functions, the remainder of this dissertation will only focus on the latter. However, assuming that socio-structural characteristics such as stability of group status and permeability of group boundaries may impact on a group's overall action ecology in some contexts (e.g., stable status and boundaries implying no or only very limited opportunities for group goal attainment), future research should be directed at investigating their impact on the control strategies suggested here.

The discussion of the social identity management strategies referred to group members' striving for a positive social identity. Implied in this notion is the prerequisite that group members not only need to see themselves as belonging to the respective group, but that they also have to derive meaning and value from their group membership (Tajfel & Turner, 1979) as a motivating force to strive for a positive social identity. In other words, they have to identify with their group. In fact, social identification has been shown to be impacted by the socio-structural variables proposed within social identity theory (Tajfel & Turner, 1979; 1986) and in turn to predict preferences for the identity management strategies (e.g., Ellemers, 1993; Mummendey et al., 1999a). The dissertation thus returns to the theoretical introduction in order to clarify the role of social identification in the process under investigation.

1.4 The Impact of Social Identification on Control Strategy Usage

According to social identity theory (SIT; Tajfel & Turner, 1979; 1986) and self-categorization theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) within the self-concept a distinction can be made between personal identity (i.e., the representation of the self as a unique individual) and social identity (i.e., the representation of the self as a group member similar to other group members). Social identity is defined as “that part of an individual’s self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership” (Tajfel, 1978, p. 63). Context-dependent processes influenced by category accessibility, social comparison, and normative fit (Turner et al., 1987) render the social self salient and thus self-categorization as a group member likely. Depending on the salience of either personal or social identity, either aspect of the self-concept will be the basis for thoughts and actions in a given situation. Following the social identity approach, it is the process of self-categorization that produces group behavior: When individuals categorize themselves as ingroup members, their perceptions, attitudes, feelings, and behaviors converge by the process of depersonalization. This process leads to individuals acting as interchangeable group members with group norms and goals becoming the guideline for behavior (Turner et al., 1987). Evidence for this reasoning has been found in research on group polarization and social influence (Turner, 1991), and in research showing that ingroup norms increase action intentions (e.g., Simon, Stürmer, & Steffens, 2000; Terry & Hogg, 1996; Terry, Hogg, & White, 1999) as well as actual behavior (e.g., Jetten et al., 1997). Furthermore, focusing on group-based self-regulation in terms of the effects of self-discrepancies, Sassenberg (2004) found discrepancies from ingroup (but not outgroup) norms to have a negative impact on group members’ well-being, thus providing evidence that ingroups also influence their members’ self-regulation via ingroup goals.

Overall, this research shows that under conditions of group membership being the salient basis for self-definition, individuals are likely to behave in accordance with group norms, values, and goals and that not doing so may have negative consequences.

However, while self-categorization and thus the social self being the agent of action

constitutes a necessary pre-condition for engagement on behalf of group goals, simply recognizing that one is a member of a group will not inevitably warrant exertion for these goals. Rather more, the level of importance of the group to the social self will determine whether or not and to what extent group members will regulate their thoughts and actions on behalf of group goals. In other words, individuals will not only have to self-categorize as group members, they will also have to psychologically identify with the group (Ashmore, Deaux, McLaughlin-Volpe, 2004). To this point, research addressing regulatory focus or self-discrepancies (and thus self-regulation effects) at the group-level has found their effects to be pronounced more strongly, the more group members are identified with their respective group (e.g., Derks, van Laar, & Ellemers, 2006; Faddegon, Scheeper, & Ellemers, in press; Kessler, Sassenberg, & Mummendey, 2006; Petrocelli & Smith, 2005; Sassenberg, Kessler, & Mummendey, 2003). For example, Petrocelli and Smith (2005) found that the more strongly individuals were identified with the group under investigation, the more did larger group-based actual-ideal discrepancies lead to higher levels of dejection or discontent. In other words, while the self-regulatory mechanism was found to be the same at the group level, levels of identification with the group determined whether the mechanism showed effects. Therefore, social identification can also be assumed to be a prime candidate as a moderator of group-based self-control.

It is thus hypothesized that provided a salient social category and hence self-categorization as a group member, higher levels of social identification will lead to more adequate control strategy usage and thus to higher levels of adequate group-based self-control. This should be the case as the more individuals are identified with a group, the more central and important the group is to the self, and the more important the group's goal should thus be to the individual.

Overall, while research conducted within the social identity approach (e.g., Tajfel & Turner, 1979; Turner et al., 1987) stressed the importance of social categorization and identification for group-goal serving behavior, it did not address strategic self-control strategies nor the impact of opportunity structures in terms of deadlines during goal pursuit. The current research attends to this gap while at the same time adding on to research addressing self-regulation at the group level. Furthermore, the impact of a group's deadline

phase status on group members' usage of self-control strategies is investigated and the hypothesized moderating role of identification in this process is explored.

2 Empirical Evidence

2.1 Overview and Hypotheses Studies 2 to 5

The dissertation's general hypothesis is that the self-control strategies suggested by the action-phase model (J. Heckhausen, 1999) for individual goal pursuit and individual deadlines also hold for the group level (i.e., for group goals and group deadlines), where the social self will be the basis of self-control given a salient social identity. Thus, it is expected that with regard to a deadline for reaching a group goal, group members will show adaptive group-based self-control in terms of control strategy usage, namely selective primary and selective secondary control prior to a deadline, and compensatory control both in terms of protection of motivational resources as well as in terms of goal disengagement once the deadline has passed. However, as the importance of the group to the social self also needs to be taken into account it is furthermore expected that social identification will moderate the relation between the group's deadline status (pre vs. post) and adaptive (i.e., phase-adequate) self-control strategy usage.

These predictions were supported in a series of three experiments (Studies 2 to 4). Using natural groups participants could chose themselves, Study 2 demonstrated that the self-control strategies also hold for the group level (i.e., when the social self is the agent of action) and that their deadline phase adequate usage is indeed moderated by social identification. Study 3 ruled out individual outcome considerations as a possible alternative explanation for the effects found in Study 2 (which were solely attributed to group-based outcome considerations). Furthermore, apart from the groups' deadline phase (pre vs. post), social identification was manipulated (high vs. low). Study 3 thus went beyond Study 2 in using quasi-minimal laboratory groups and in testing the crucial role of social identification in a more controlled manner. In Study 4, replicating the paradigm of Study 3, behavioral indicators of the most important control strategy (i.e., selective primary control) were investigated as outcome variables.

The fifth study sought to validate the control strategies in a real life context for group supporters rather than group members, where the proposed relation between identification,

the deadline phase of the group, and control strategy usage can be expected to differ (for a detailed discussion, see section 2.5). Specifically, Study 5 investigated the engagement in control strategies by highly and moderately identified soccer fans and found support for the prediction that in this context, the moderately (compared to the highly) identified group supporters would be sensitive to the group's action ecology in terms of a perceived group deadline.

2.2 Study 2

Study 2 comprised the initial attempt to test whether the control strategies suggested for individual goal pursuit in pre- vs. post-deadline action phases can also be applied to self-control at the group level by manipulating the group's deadline phase (compared to merely measuring opportunities as in Study 1). Participants were asked to think of a group they belonged to and to name a goal of this group. As a manipulation of the deadline, they were requested to imagine and to describe a group they belonged to as being in either a pre- or a post-deadline phase of action. It was predicted that the more participants are identified with their respective group, the more they would report engaging in phase-adequate control strategy usage.

2.2.1 Method

Design and participants

The study comprised two conditions, one of pre-deadline phase and the other post-deadline phase of group goal pursuit. Social identification was measured as continuous independent variable. A total of 124 undergraduate students from the Friedrich-Schiller-University of Jena (Germany) were recruited on campus and participated in this study. They received 2.50 € as compensation. Their mean age was 22 years (range 18 to 36) and 90 were female.

Procedure

The study was introduced as general research on social groups and participants were randomly assigned to conditions (pre- vs. post-deadline phase). They were asked to think of a group to which they belonged and were instructed to write down the name of the group and a goal associated with it. Importantly, they were instructed to make sure that they could personally contribute to the chosen goal and that this goal was shared by other group members. Next, they were asked to write down a detailed description of the group and its striving towards the group goal. Social identification was measured prior to the manipulation of the deadline phase. Depending on the experimental condition, participants were required to deliberate on a situation in which chances were still high to reach the group goal (pre-deadline condition), or to think of a situation in which irrespective of group members' efforts the group goal could not be attained any more (post-deadline condition). Participants were invited to write a short text explaining the specific situation that they had in mind and especially why the group goal could or could not be attained anymore (in the pre- vs. post-deadline condition, respectively). Participants then answered the questions assessing the control strategies, the manipulation checks, and socio-demographic questions. Finally, participants were debriefed, compensated, and dismissed.

Measures

Social identification. Eight items chosen from Luhtanen and Crocker (1992) assessed social identification on a scale ranging from 1 (= *does not apply*) to 7 (= *completely applies*; e.g., "I identify with this group", $\alpha = .83$).

Control strategies. Group-based primary and secondary control was assessed with a group-based version of the Optimization with Primary and Secondary Control Scales (OPS scales; J. Heckhausen et al., 1998) adapted to the study's context. Participants rated the extent to which each item applied to them personally on a 5-point scale ranging from 1 (= *does not apply*) to 5 (= *completely applies*). Four control strategies were assessed. *Selective primary control* (SPC; the first pre-deadline strategy) was measured with four items (e.g., "I will show a lot of effort in order to support our group in achieving its goal", $\alpha = .75$).

Selective secondary control (SSC; the second pre-deadline strategy) was also measured with four items (e.g., “While being engaged in the group goal, I will remind myself of the positive consequences we will have provided we are successful”, $\alpha = .72$). *Compensatory secondary control in terms of protection of motivational resources* (CSCprot; the first post-deadline strategy) was assessed using six items (e.g., “Provided our efforts do not lead to success I will remind myself that this was not our fault”, $\alpha = .74$). Finally, *compensatory secondary control in terms of goal disengagement* (CSCdis; the second post-deadline strategy) was assessed using four items (e.g., “Realizing that we can not attain our goal, I will give up that goal”, $\alpha = .67$). Compared to Study 1 (in which this strategy was only assessed with one item due to the long questionnaire also assessing the identity management strategies), this allowed tapping into various aspects of goal disengagement (e.g., down-regulation of effort, giving up the goal, changing domains).

Manipulation check. Using a scale ranging from 1 (= *does not apply at all*) to 7 (= *applies very much*), participants were asked to indicate on two items to what extent they thought that the group goal could still be attained (e.g., “While filling in the questionnaire, to what extent did you believe that your group could still attain its goal?”). These items correlated in the expected manner, $r(124) = .71, p < .001$. They were thus summarized so that higher values indicate perceiving the group to be in a pre-deadline phase.

2.2.2 Results

Manipulation check

Confirming the success of the manipulation, pre-deadline participants imagined their group being able to achieve its goal to a larger extent ($M = 5.90, SD = 1.06$) than participants in the post-deadline condition ($M = 5.13, SD = 1.30$), $F(1,124) = 12.42, p < .001, \eta_p^2 = .09$.

Control strategies

In order to make explicit the moderating impact of identification, separate multiple regression analyses for each of the four control strategies using Deadline (pre- vs. post-deadline coding 1 and -1, respectively), participants' z-standardized identification scores, and the product between identification and Deadline as predictors were conducted.

The regression conducted on selective primary control (SPC) revealed a significant main effect of deadline ($\beta = .31, p < .001$), indicating stronger strategy usage in the pre- than in the post-deadline condition, and a significant main effect of identification ($\beta = .52, p < .001$), revealing that the more group members were identified, the more they engaged in the usage of this SPC strategy. In line with predictions, these effects were qualified by the interaction between deadline and identification ($\beta = .15, p < .05$). The presence or absence of a deadline phase effect for highly compared to lowly identified participants is central to the prediction concerning group-based self-control. Therefore, simple slope analyses following the procedure suggested by Aiken and West (1991) were conducted to investigate this interaction. In line with predictions, in the pre-deadline condition higher identification was conducive to stronger usage of selective primary control ($\beta = .46, p < .001$) while this effect was nonsignificant for lower levels of identification ($\beta = .15, p = .14$; see Figure 2).

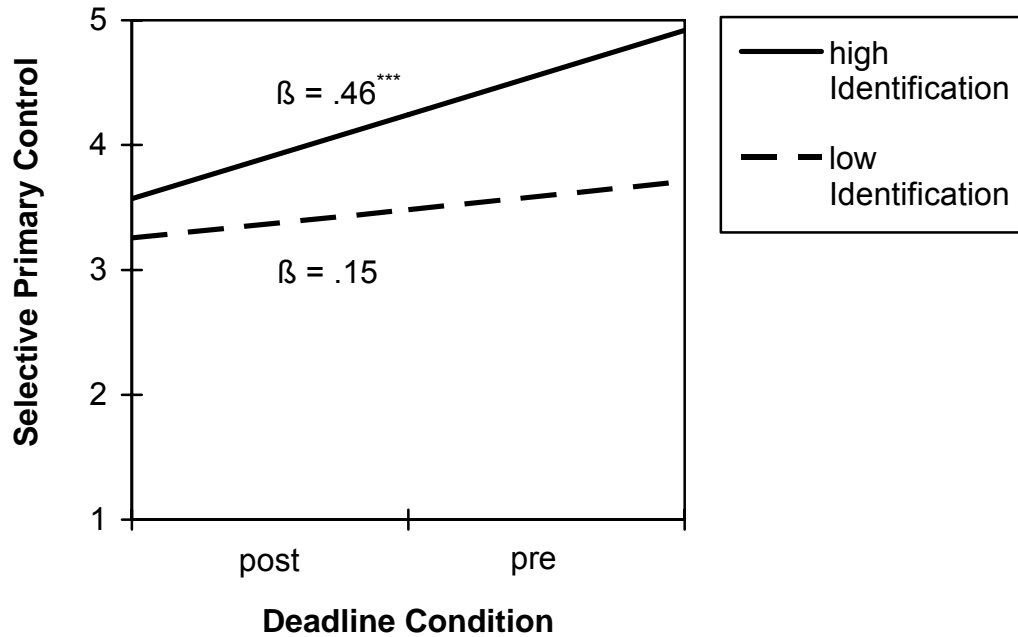


Figure 2. Selective primary control as a function of identification and deadline condition in Study 2. *** $p < .001$.

The regression conducted on the second pre-deadline strategy of selective secondary control (SSC) revealed stronger usage of this strategy in the pre-compared to the post-deadline condition ($\beta = .16, p < .05$), and stronger usage of this strategy with higher levels of identification ($\beta = .47, p < .001$). This time, however, the interaction between deadline and identification was not significant ($\beta = .02, p = .766$).

For the first post-deadline strategy of compensatory secondary control in terms of protection of motivational resources (CSCprot) the regression analysis did not reveal any main effects (both $|\beta s| < .14$, both $ps > .14$). Of greater interest for the current research question however, a trend towards the predicted interaction between deadline phase and identification emerged ($\beta = -.16, p = .077$). In line with the hypothesis, in the pre-deadline condition higher identification was detrimental to usage of CSCprot ($\beta = -.29, p < .05$) while the effect for lower levels of identification was nonsignificant ($\beta = .03, p = .831$).

Finally, the regression conducted on the second post-deadline strategy of compensatory secondary control in terms of goal disengagement (CSCdis) only revealed lesser usage of this strategy in the pre- compared to the post-deadline condition ($\beta = -.24$, $p < .01$), in line with expectations. However, no main effect of identification was observed, nor was there evidence for the interaction between deadline and identification (both $|\beta s| < .09$, both $ps > .32$).

Overall, the hypothesis that the more identified individuals are, the more adequately they engage in self-control strategies on behalf of group goals in line with their groups' deadline phase status received initial support concerning two of the control strategies (i.e., selective primary control and compensatory secondary control in terms of protection of motivational resources).

2.2.3 Discussion

Study 2 tested whether the control strategies suggested by the action-phase model for individual goal pursuit (J. Heckhausen, 1999) can also be found at the group level, where the social self is the agent of action. In line with this reasoning, the results provide evidence for higher self-reports of pre-deadline strategy usage (SPC and SSC) of participants in the pre- compared to the post-deadline phase of group goal striving. Conversely, for one of the post-deadline strategies (CSCdis) the pattern reversed. More importantly, the results lend initial support to the hypothesis that strategy usage will be stronger and more adequate, the more individuals identify with their group. Specifically, the more participants identified with their group, the more readily they selected SPC and CSCprot strategies in accordance with their group's deadline phase (i.e., adequately: SPC in a pre- and CSCprot in a post-deadline phase). Selective primary control (SPC) can be considered the most efficient pre-deadline strategy (cf. J. Heckhausen & Schulz, 1995) because it addresses the active shaping of one's environment in line with group goals. Likewise, compensatory secondary control in terms of protection of motivational resources (CSCprot) can be considered the most efficient post-deadline strategy, as it buffers one's motivational resources for further group goal pursuit. Thus, the data supports the dissertation's theoretical reasoning

concerning the two most efficient group-based self-control strategies.

A strength of the study is the broad sample of groups used (underlying the generalizability of the model) by participants being free to select any group they wanted. A possible shortcoming, however, is the study's correlational nature. In order to avoid differences in group membership and in groups *per se* from influencing the findings, it would be desirable that all participants belong to the same group.

Encouraging as the findings may be, some limitation should be noted. First, the hypothesized interactions only emerged for two of the four strategies. Furthermore, the way the deadline was introduced in Study 2 was somewhat weak. Participants imagined that the group goal still could, respectively could not be attained (vs. a rather clear cut deadline as used by J. Heckhausen et al., 2001).

Finally, individual outcome considerations may have played a role, as outcomes of group goal attainment could have applied to participants personally. In other words, some participants may have used the group in an instrumental manner as a means to achieve individual goals (e.g., a member of a citizens' initiative for a by-pass road only getting involved for the personal interest of avoiding noise exposure). The fact that seemingly group-serving behavior may indeed be instrumental, rational, and utilitarian behavior aimed at maximizing the (economic) self-interests of individual group members has been addressed by the behavioral interaction model (BIM; Rabbie, Schot, & Visser, 1989). In their critique of the interpretation concerning the findings of the minimal group paradigm (Tajfel, Billig, Bundy, & Flament, 1971) Rabbie et al. (1989; see also Rabbie & Horwitz, 1988) explicitly stated and empirically tested the positive goal interdependence of group members concerning their own monetary outcomes as a driving force of behavior in favor of their ingroup. The rationale behind this reasoning is that compared to outgroup members, individuals perceive stronger outcome dependence with ingroup members, which leads them to have higher reciprocal expectations of ingroup members and thus to engage in group-serving behavior (e.g., allocation of points; cf. also Gaernter & Insko, 2000; for a similar argument concerning intra-group processes see Karau & Williams, 1993). In fact, such a sense of interdependence has even been proposed as an element of social

identification (e.g., Ashmore et al., 2004). Stroebe, Lodewijkx, and Spears (2005) directly tested the reciprocity and social identity theory approach by manipulating the outcome dependence relationship between in- and outgroup members and found evidence for both approaches. Thus, Study 3 rules out individual outcome considerations impacting on control strategy usage in order to demonstrate that adaptive control strategy usage indeed depends on levels of identification and not on individual (monetary) interests.

2.3 Study 3

Study 3 was conducted to test whether the model and assumptions also hold when individual outcome considerations are done away with by utilizing quasi-minimal laboratory groups without a history. It was expected to nonetheless find evidence for group-based self-control because it is the social, and not the individual self, which is the agent of control. Thus, eliminating individual profit should not impact on control strategy usage. Furthermore, the previous study was correlational, and hence does not allow drawing conclusions concerning causal relations. Therefore, both social identification and the deadline phase were manipulated. Study 3 thus uses bogus pipeline paradigms for the creation of social categories in the lab and for the manipulation of identification. Also, the manipulation of the deadline phase is implemented in a more absolute manner (i.e., in terms of time left for the group to reach its goal).

2.3.1 Method

Design and participants

A study with a 2 (Deadline phase: pre vs. post) x 2 (Identification: high vs. low) between-subjects factorial design was conducted. As in Study 1 measures of group-based self-control strategies were included as dependent variables. A total of 120 undergraduate students of the Friedrich-Schiller-University of Jena (Germany) were recruited on campus and participated in this study. Their mean age was 22 years (range 19 to 32) and 77 were female.

Procedure

Participants were recruited for a study allegedly focusing on two unrelated aspects: perception styles and dynamic compensation structures. Prior to the experiment they were told that they would receive approximately 4 € as remuneration for participation. Upon arriving at the laboratory, participants were seated in separate small cabins, a door was shut behind them, and they received further instructions via the computer. They were informed that the experiment consisted of several parts and that they were to work on different tasks together with other participants sharing the same perception style, because the study was allegedly interested in the influence of perception styles on teamwork. Participants were further informed that the study investigated dynamic remuneration, and that their remuneration would therefore depend on the performance of previous ingroup members (i.e., other participants with the same perception style as theirs in preceding rounds). Likewise, the remuneration of future participants with the same perception style (i.e., future ingroup members taking part in the experiment) would depend on participants' performance today. This procedure was implemented in order to avoid that personal outcome considerations impact on self-control strategy usage in this experiment. Thus, if participants engaged in self-control strategy usage this would only be on behalf of their ingroup but not for individual benefit considerations.

Next, participants were assigned to minimal groups. For this they completed a *perception style task* that was ostensibly used to distinguish between 'focal' and 'basal' perceivers. In reality, all participants were categorized as belonging to the group of 'focal' perceivers. In order to *manipulate strength of social identification* with the group of focal perceivers a 'bogus pipeline' procedure developed and implemented by Faddegon et al. (in press) was used. This procedure was modeled after the affective priming task (e.g., Fazio, Sanbonmatsu, Powell, & Kardes, 1986). Participants completed a total of 10 trials in which either the label 'focal group' or 'basal group' was flashed on the screen for 100 milliseconds, thus making sure that participants were aware of the fact that something was being presented to them. Immediately after the group label a word appeared on the screen and participants had to judge whether it had a positive or a negative value attached to it.

These target words were in one way or another related to the concept of social identification (e.g., positive: ‘connected’; negative: ‘divided’). Participants had to react as quickly and accurately as possible to these words with their value judgments. Having completed the bogus test, they were told that based on their reaction times the computer could calculate how strongly connected they felt to their group. Strong ties with ones ingroup (i.e., the group of focal perceivers) were said to be indicated by a speed up in responses to positive words and a slow down in responses to negative words after being flashed with the label ‘focal group’. A reversed pattern of responses was said to be indicative of strong group identification following the label ‘basal group’. Furthermore, participants were told that their score would fall somewhere between 0 and 100, the later indicating the highest score of group identification and importance of the group. Participants in the low identification condition received a score of 38, which was furthermore presented as laying below the score of the average group member (allegedly said to be 48). Contrary, participants in the high identification condition were informed that they scored at 63 (and thus above the average score of 48) and that this implied that they felt strongly connected to their group.

Directly after having received the bogus identification feedback, participants’ social identification with the group of ‘focal’ perceivers was assessed as a manipulation check. Subsequently they were allegedly connected via the server with other ingroup members (i.e., other participants who currently took part in the experiment and who had also been classified as ‘focal’ perceivers).

Participants were then reminded of the dynamic remuneration in the study. They were told that due to the good performance of focal perceivers (i.e., their ingroup members) in previous rounds, they would be compensated with 5 € instead of 4 €. However, they were also told that future participants from their ingroup (i.e., with a focal perception style) would only also receive 5 € if they as a group managed to gain at least 43 points in the tasks to take place. To ensure that participants understood the consequences of this remuneration procedure, they could only continue with the experiment if they correctly answered two questions (“On whom does the remuneration of you and your fellow group members today

depend?"; "Who can potentially benefit from your effort in the current experiment?"). If participants responded incorrectly, they were taken back to the page explaining the remuneration procedure until they were able to correctly answer these two questions. Furthermore, they were informed that they only had a limited amount of time to complete the tasks and that they would receive feedback on their time budget sometime during the experiment.

Participants went on to complete a filler task (i.e., sentence completion) in order to give them the impression they were actually connected to other ingroup members. They were instructed to either start with a sentence or to complete unfinished sentences (allegedly written by other ingroup members), thus creating a humorous text, and were told that their group would receive points depending on how funny these sentences were.

Following this task, participants went on to complete a round of a total of six four-letter anagrams. Each anagram consisted of a string of letters participants attempted to 'unscramble' to find the solution (there was always only one solution). The anagrams were presented on the computer screen and participants had to type their solution into a box under the anagram. The description of the task informed participants that without a solution the next anagram would automatically appear after 90 seconds and that they could skip any of the anagrams at any time by pressing a button labeled 'next'.

Having completed the first anagram-round participants received feedback on their group score, namely that their group had so far achieved a total of 21 of the necessary 43 points required for future ingroup members participating to also receive 5 instead of 4 €. Furthermore, they were informed that a second anagram round would take place with anagrams of greater complexity (i.e., with more letters). In order to *manipulate the deadline phase* participants also received a group feedback on their time budget. In the pre-deadline condition they were told that their group still had some time left for the second anagram round and that group goal attainment was still possible. In the post-deadline condition they were told that unfortunately their group had already used up all of its time and that the group goal could therefore not be attained anymore, but that they could nonetheless go through the second anagram round and try to solve the word-puzzles.

Prior to the announced second anagram solving round (which, in fact, did not take place), participants were presented with a questionnaire assessing the control strategies as the main dependent variables. They had to state to what extent they would use these in the second anagram round. Finally, the manipulation check concerning the deadline condition was assessed, socio-demographic information was collected, participants were debriefed, compensated with the announced 5 €, and dismissed.

Measures

Control strategies. A similar group-based version of the Optimization with Primary and Secondary Control Scales (OPS scales; J. Heckhausen et al., 1998) as in the previous studies was administered, albeit adapted to the group goal and the context of the current study. On a scale ranging from 1 (= *does not apply*) to 5 (= *completely applies*) participants rated the extent to which each item applied to them. *Selective primary control* (SPC; the first pre-deadline strategy) was assessed with five items (e.g., “While working on the second anagram round I will show a lot of effort”, $\alpha = .89$). *Selective secondary control* (SSC; the second pre-deadline strategy) was also assessed with five items (e.g., “While working on the second anagram round I will tell myself that we can make it, if we really want to”, $\alpha = .81$). *Compensatory secondary control in terms of protection of motivational resources* (CSCprot; the first post-deadline strategy) was assessed with nine items (e.g., “While working on the second anagram round I will think: My group is probably very good at other tasks”, $\alpha = .82$). Finally, *Compensatory secondary control in terms of goal disengagement* (CSCdis; the second post-deadline strategy) was assessed with three items (e.g., “While working on the second anagram round I will tell myself that the group goal of reaching a certain amount of points is nonsense”, $\alpha = .81$).

Manipulation check of social identification. As in the previous study, eight items assessed social identification on a scale ranging from 1 (= *does not apply*) to 7 (= *completely applies*; e.g., “I identify with this group”, $\alpha = .91$).

Manipulation check of deadline condition. Using a scale ranging from 1 (= *does not apply at all*) to 7 (= *completely applies*), participants had to state on two items to what extent they thought that the group goal could still be attained (e.g., “Our group still has

enough time in order to achieve the required points in the second anagram round”). These items correlated in the expected manner, $r(120) = .78$, $p < .001$. They were thus summarized so that higher values indicate perceiving the group to be in a pre-deadline phase.

2.3.2 Results

Manipulation check

Social identification. Confirming the success of the manipulation, the results of an ANOVA including Identification (high vs. low) and Deadline condition (pre vs. post) revealed that participants in the high identification condition reported higher ingroup identification ($M = 4.45$, $SD = 1.04$) with the group of focal perceivers than participants in the low ingroup identification condition ($M = 3.84$, $SD = 1.03$), $F(1,116) = 10.57$, $p < .001$, $\eta_p^2 = .08$; all other F s < 1 .

Deadline condition. Likewise confirming the success of the second manipulation, an ANOVA including Deadline condition (pre vs. post) and Identification (high vs. low) indicated that participants in the pre-deadline condition indeed believed that the group goal could still be attained to a larger extent ($M = 3.76$, $SD = 1.41$) than participants in the post-deadline condition ($M = 2.26$, $SD = 1.85$), $F(1,116) = 23.88$, $p < .001$, $\eta_p^2 = .17$; all other F s < 1 .

Control strategies

It was hypothesized that given a high social identification the group goal should be more important to the social self, which in turn should lead to more phase-adequate usage of the control strategies. In other words, differences in self-control strategy usage were predicted for highly identified participants only, and furthermore these differences were expected to correspond with their group’s deadline phase status. To test this, a mixed ANOVA was conducted with Deadline (pre- vs. post-deadline) and Identification (high vs. low) varying between participants, and Strategy (selective primary control, SPC; selective secondary control, SSC; compensatory secondary control in terms of protection of

motivational resources, CSCprot, and in terms of goal disengagement, CSCdis) varying within participants.

There was a trend towards a linear effect of Identification, $F(1,116) = 3.34, p = .07, \eta_p^2 = .03$. Strategy usage was different for the four strategies, $F(3, 348) = 160.52, p < .001, \eta_p^2 = .58$. Strategy usage also depended both on Deadline condition, as revealed by a significant Strategy by Deadline condition interaction, $F(3, 348) = 7.92, p < .001, \eta_p^2 = .06$, and on Identification, as indexed by a significant Strategy by Identification interaction, $F(3, 348) = 2.65, p < .05, \eta_p^2 = .02$. Most importantly, the predicted three-way interaction between Strategy, Deadline condition, and Identification was significant, $F(3, 348) = 5.35, p = .001, \eta_p^2 = .04$. Furthermore, the linear contrast of Strategy x Deadline condition x Identification was also significant, $F(1, 116) = 6.15, p < .05, \eta_p^2 = .05$.

Simple comparisons of means between participants in the pre- vs. the post-deadline condition were conducted. In line with the prediction, these comparisons were significant concerning all control strategies for participants in the high identification condition (all $F_s > 8.52$, all $p_s < .01$) but not for participants in the low identification condition (all $F_s < 0.63$, all $p_s > .43$; see Figure 3). Moreover, all significant differences for participants in the high identification condition were in line with the predicted direction: Compared to the highly identified participants in the post-deadline condition, highly identified participants in the pre-deadline condition reported using the pre-deadline strategy of *selective primary control* (SPC) to a larger extent (pre-deadline condition: $M = 4.51, SD = 0.60$; post-deadline condition: $M = 3.88, SD = 0.86$), $F(1, 116) = 10.63, p < .01$. The same pattern of results, also in line with predictions, holds for the second pre-deadline strategy of *selective secondary control* (SSC; pre-deadline condition: $M = 4.27, SD = 0.63$; post-deadline condition: $M = 3.68, SD = 0.87$), $F(1, 116) = 8.52, p < .01$. Corresponding to the groups' deadline phase and the hypothesis, this pattern reverses for the post-deadline strategies: Compared to highly identified participants in the pre-deadline condition, highly identified participants in the post-deadline condition report using the post-deadline strategy of *compensatory secondary control in terms of protection of motivational resources* (CSCprot) to a larger extent (post-deadline condition: $M = 2.96, SD = 0.76$; pre-deadline

condition: $M = 2.30$, $SD = 0.73$), $F(1, 116) = 17.95$, $p < .001$. Again, this pattern also holds for the second post-deadline strategy of *compensatory secondary control in terms of goal disengagement* (CSCdis; post-deadline condition: $M = 2.38$, $SD = 0.99$; pre-deadline condition: $M = 1.66$, $SD = 0.80$), $F(1, 116) = 9.32$, $p < .01$.

In sum, the hypothesis that differences in control strategy usage would only be present for highly identified group members and that these differences would adequately correspond to the group's deadline phase of goal pursuit was supported for all four control strategies investigated.

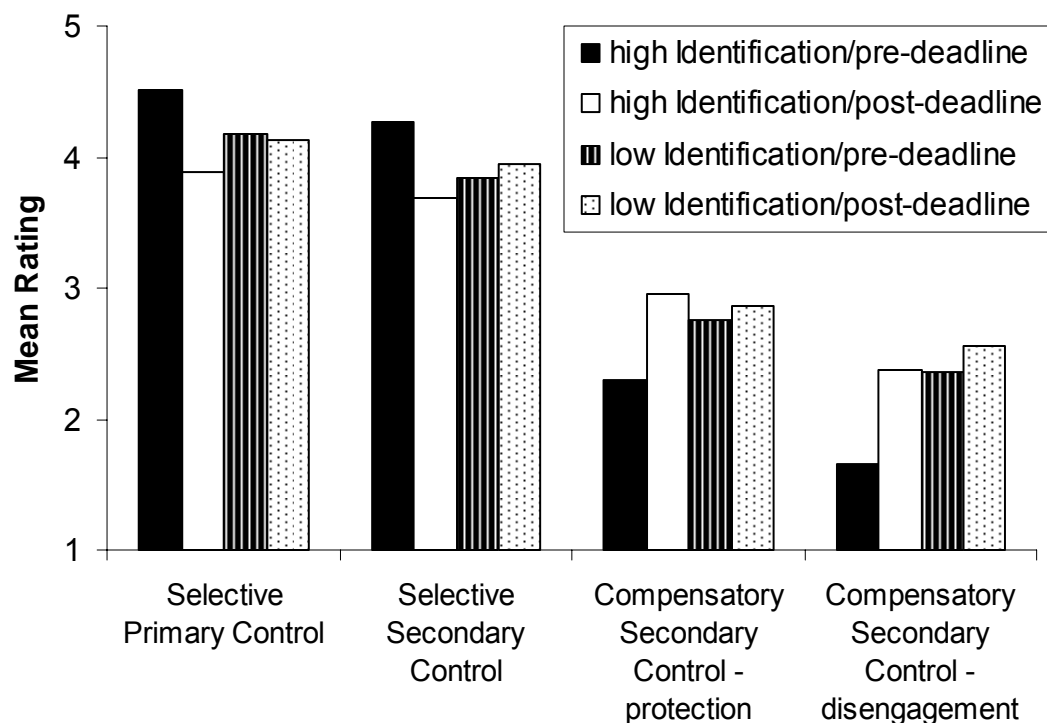


Figure 3. Endorsement of control strategies of participants by deadline condition (pre vs. post) and identification condition (high vs. low) in Study 3.

2.3.3 Discussion

Manipulating both identification and deadline phase of the group, the assumption that differences in group-based self-control in line with the group's deadline phase (and thus being adaptive) would be found for highly identified group members only were supported by all simple comparisons between these highly identified participants in the pre- compared to post-deadline condition. The deadline condition did not have an impact on lowly identified group members in terms of control strategy usage, indicating that they were not sensitive or susceptible to the group's deadline phase. This corroborates the dissertation's reasoning that only given high social identification with one's group, the group goal is important to the social self which leads these individuals to adaptively engage in group-based self-control. Furthermore, while results of Study 2 were limited to the most effective self-control strategies (i.e., selective primary control and compensatory secondary control in terms of protection of motivational resources), Study 3 not only replicated the findings but in addition found the predicted effects for all four pre- and post-deadline strategies.

Also, the unpredicted finding that regardless of deadline condition lowly identified participants reported more post-deadline strategy usage in terms of goal disengagement than highly identified participants in the pre-deadline condition is in line with assumptions. It was stated earlier that the more group members are identified, the more central the group is to the social self and the more important the group goal should be. Lower identification, however, is consequently linked to less group goal importance – and thus to post-deadline strategies related goal disengagement processes. Overall, this finding indicates that lower goal importance (as indicated by lower identification) leads to compensatory secondary control in terms of disengagement. This reasoning of lower goal importance being related to higher goal disengagement is in line with research on the individual level. For example, Gagné, Brun de Ponet, and Wrosch (2008) found incumbents not or merely lowly committed to their work goals to report lower levels of life satisfaction and higher levels of work-burnout, but only if they were unable to disengage from goals. However, regardless of deadline condition lowly identified group members also reported more compensatory secondary control in terms of protection of motivational resources than highly identified

group members in the pre-deadline condition. One might wonder why these lowly identified group members should engage in this strategy to begin with. First, even though they were told that they were lowly identified with the group, they nonetheless belonged to the group and thus in one way or another had to process group-relevant information and deal with it. Second, and more important, given the ample evidence for a positive relation between identification and group goal commitment (for an overview see, e.g., Doosje, Ellemers, & Spears, 1999) the reverse relation, namely a negative relation between identification and group goal commitment also holds. For lowly identified group members this requires a cognitive reinterpretation such as captured by compensatory secondary control. Notwithstanding these considerations, the most important point here is that, as predicted, differences in strategy usage as a function of level of identification were limited to highly identified participants and differences in reported strategy usage for these participants were in line with the group's deadline status (and thus adequate).

Study 3 addressed individual outcome considerations as an alternative explanation for group-based self-control (cf. Rabbie et al., 1989). By means of the future participants' remuneration procedure the Study was able to show that even in the absence of personal benefit from group goal attainment, high identifiers nonetheless more readily select self-control strategies on behalf of the group in line with their groups' deadline phase of goal pursuit. This corroborates the findings by Stroebe et al. (2005), indicating that apart from a reciprocity approach, the social identity theory approach does indeed hold. As the personal self could not profit from engagement in this study, the current findings also indirectly strengthen the argument that it is the social, and not the individual self, that is being regulated. Furthermore, as individual performance feedback was neither provided to participants nor was made public to other present or future ingroup members, symbolic personal interests (such as improving one's image; Branscombe, Spears, Ellemers, & Doosje, 2002) are also not likely to have impacted on the measures of group-based self-control.

Overall, Studies 2 and 3 demonstrated that both for natural and quasi-minimal groups the control strategies suggested by the action-phase model for individual goal pursuit (J.

Heckhausen, 1999) can also be found when the social self is the agent of action. Furthermore, the assertion that the relation between one's group's deadline phase of group goal pursuit and self-control strategy usage is moderated by social identification was supported.

However, it has been stressed that research concerning behavioral efforts at the group level should not be limited to self-reports, but should rather go beyond this in showing the effects for behavioral measures (e.g., Mackie & Smith, 1998). Study 4 was therefore conducted in order to go beyond self-report measures and to provide evidence for the hypothesized effect on behavioral measures of group-based self-control.

2.4 Study 4

Study 4 assessed behavioral measures of the most important self-control strategy, namely selective primary control (J. Heckhausen & Schulz, 1995). A similar procedure as in Study 3 was chosen. However, three alternations were made. First, the Study made use of a different minimal categorization. Second, paralleling Study 2, social identification was measured as a continuous independent variable. Finally, instead of filling in questionnaires, participants were confronted with a second anagram round which allowed tapping into behavioral measures of the most important pre-deadline strategy: selective primary control.

2.4.1 Method

Design and participants

The experiment comprised two conditions, one of pre-deadline phase and the other of post-deadline phase of group goal striving. Social identification was measured as a continuous independent variable. A total of 125 undergraduate students from the Friedrich-Schiller-University of Jena (Germany) were recruited on campus and participated in this study. Their mean age was 22 years (range 18 to 42) and 89 were female.

Procedure

Participants once again worked in separate cabins, received all information via the computer, and were informed about the future participants' remuneration procedure. Except for some alterations, the same procedure and material as in Study 3 was implemented. Based on a bogus *concentration style test* participants were now categorized as having a 'concave' (and not a 'convex') concentration curve and thus as belonging to the 'concave concentration style group'. Social identification with their ingroup was not manipulated but measured before participants went on to complete the filler tasks (i.e., the sentence completion task and the first round of anagrams). The third alteration amounted to the announced *second anagram solving round* actually taking place. Participants were confronted with a total of 15 anagrams. Overall, 13 of these anagrams were indeed solvable, while two anagrams were in fact unsolvable. Anagrams were again presented on the computer screen with a box placed under them into which participants had to type their solution. The description of the task made it clear that without a solution, the next anagram would automatically appear after 2 minutes and there was a possibility of skipping any of the anagrams at any time by pressing a button labeled 'next'. Participants were further asked to indicate how much time they would be willing to stay after the experiment in order to share their gained knowledge concerning the solving of anagrams with other ingroup members as a further indicator of engagement in selective primary control on behalf of the group. Otherwise, the procedure was the same as in Study 3.

Upon completion of the second anagram round socio-demographic information was collected, participants were debriefed, compensated with the announced 5 €, and dismissed.

Measures

Social identification. Six items assessed social identification on a scale ranging from 1 (= *does not apply*) to 7 (= *completely applies*; e.g., "I identify with other members of this group", $\alpha = .69$).

Time spent on solvable anagrams. As a behavioral operationalization of selective primary control (which most importantly involves the investment of time and effort and thus persistence; cf. J. Heckhausen & Schulz, 1995; J. Heckhausen et al., 2001) the time that participants spent on a total of 13 solvable anagrams varying in length from four to seven letters was assessed. The maximum time participants could spend on each of these solvable anagrams was limited to two minutes, after which they were automatically presented with the next anagram. They could shorten this time by pressing a button labeled ‘next’. In order to measure persistence the time participants attempted to solve the anagram prior to pressing the ‘next’ button was recorded.

Time spent on unsolvable anagrams. In order to measure persistence, provided there is no solution for the anagram and thus unconfounded of interindividual differences in anagram solving capacities, the time that participants spent on two unsolvable 7-letter anagrams was also recorded. Time on these anagrams was likewise limited to two minutes with the option of skipping them with a ‘next’ button prior to the time limit.

Willingness for additional effort. After the second anagram round participants were asked to indicate on a scale ranging from 1 (= *not at all*) to 7 (= *very much*) to what extent they were willing to stay in the lab after the experiment without receiving additional reimbursement, in order to provide future ingroup members with the knowledge they had gained in solving anagrams. This second operationalization of selective primary control provides an insight into participants’ willingness to show additional effort and investment of time on behalf of their ingroup, also independent of individual outcome considerations and at the cost of one’s spare time. Participants were explicitly told that they would be required to stay the time indicated after the experiment.

Manipulation check of deadline condition. On a scale ranging from 1 (= *does not apply at all*) to 7 (= *applies very much*) participants rated three items assessing to what extent they thought that the group goal could still be attained (e.g., “Our group still has enough time in order to achieve the required points in the second anagram round”, $\alpha = .81$).

2.4.2 Results

Manipulation check

The manipulation was successful, as indicated by participants in the pre-deadline condition believing that the group goal could still be achieved to a larger extent ($M = 4.49$, $SD = 1.26$) compared to participants in the post-deadline condition ($M = 2.61$, $SD = 1.42$), $F(1,123) = 60.33$, $p < .001$, $\eta_p^2 = .33$.

Behavioral measures of selective primary control

As before, differences in self-control strategy usage were expected for highly identified participants only. Specifically, it was assumed that in a pre-deadline phase of goal pursuit, especially the highly identified participants will express phase-adequate self-control by engaging in the pre-deadline strategy of selective primary control investigated in this study.

Separate multiple regression analyses were conducted for the three main behavioral criterion measures of selective primary control using Deadline (pre- vs. post-deadline coding as 1 and -1, respectively), participants' z-standardized identification scores, and the product of identification and Deadline as predictors.

The regression conducted on the time participants spent on the solvable anagrams before skipping (i.e., first behavioral measure of the pre-deadline strategy of selective primary control) revealed no significant main effects (both $|\beta_s| < .12$, both $ps > .21$). Of greater interest for the current research question however, in line with the prediction a marginal interaction between deadline condition and identification emerged ($\beta = .18$, $p = .065$). Simple slope analyses according to Aiken and West (1991) were conducted in order to explore the nature of this interaction. In line with the hypothesis, in the pre-deadline condition higher identification was conducive to spending time on the solvable anagrams ($\beta = .17$, $p = .194$) while for lower identification the descriptive pattern reversed ($\beta = -.18$, $p = .184$).

The same regression was conducted on the time participants spent on the anagrams that were de facto not solvable and thus on a stronger measure of persistence. While there

were no main effects (both $|\beta s| < .13$, both $p s > .17$), the expected interaction between deadline condition and identification ($\beta = .24$, $p < .01$) emerged. Again, resolving the interaction via simple slope analyses, the predicted pattern was found: In the pre-deadline condition higher identification was conducive to spending more time on the unsolvable anagrams ($\beta = .36$, $p < .01$) while the effect for lower identification was unreliable ($\beta = -.11$, $p = .417$; see Figure 4).

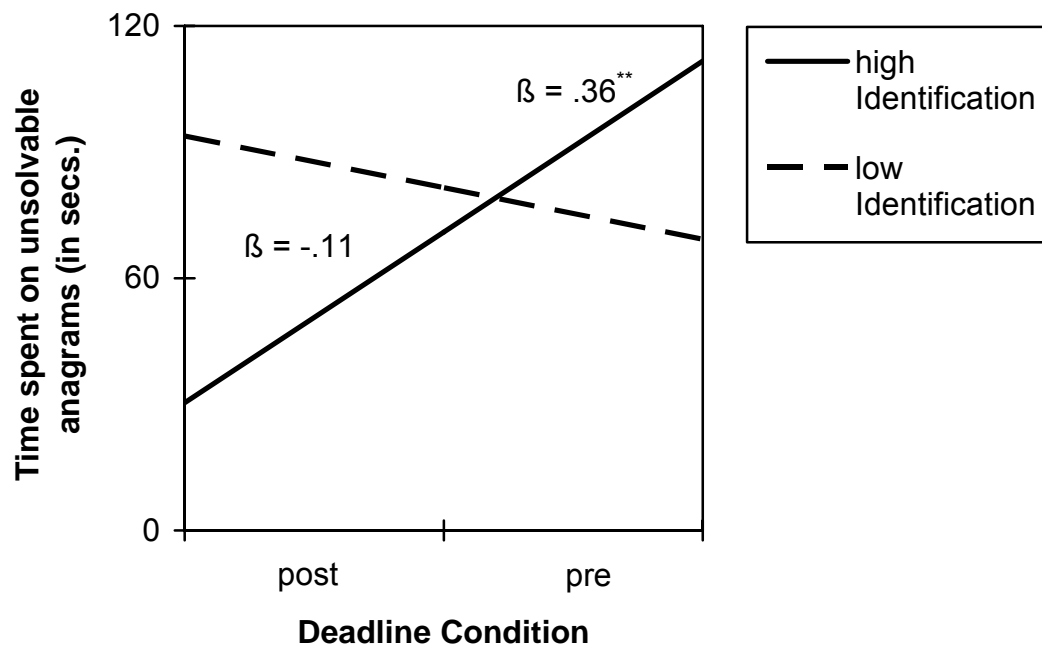


Figure 4. Time spent on unsolvable anagrams as a function of identification and deadline condition in Study 4. ** $p < .01$.

Finally, the same regression was also conducted on the final measure of selective primary control (i.e., participants' willingness to stay in the lab after the experiment to train future ingroup members on solving anagrams). This revealed that the more group members were identified, the more they were willing to stay and train future participants ($\beta = .33$, $p < .01$). More important, the hypothesized moderating role of social identification was indicated by a significant interaction between deadline condition and identification ($\beta = .20$,

$p < .05$). Again, resolving this interaction via simple slope analysis, the hypothesized pattern emerged: In the pre-deadline condition higher identification was conducive to indicating willingness to spend additional effort in staying after the experiment to train future ingroup participants ($\beta = .28, p < .05$) while for lower identification there was no reliable effect ($\beta = -.10, p = .395$).

In sum, for all behavioral measures of selective primary control (i.e., time spent on both solvable and unsolvable anagrams, as well as willingness to train future participants without compensation) there was evidence for the assumption that the more group members are identified with their group, the more they engage in this control strategy, but only if this is in line with their group's deadline phase of goal pursuit.

2.4.3 Discussion

The results on behavioral measures of the most important pre-deadline strategy (i.e., selective primary control) corroborated the hypothesis investigated in this study: Compared to the post-deadline condition, in the pre-deadline condition the more participants identified with their group, the more selective primary control they showed in terms of time that they spent on trying to solve anagrams. This pattern was even more pronounced for anagrams that participants believed to be solvable, but that in fact were not. The more identified participants in the pre-deadline (compared to the post-deadline) condition were, the more they also indicated willingness to stay after the experiment in order to instruct future ingroup members on how to best solve the anagrams presented in the study. It is worthwhile noting that these results were obtained (a) despite participants being aware of the fact that they could easily and without personal losses or sacrifices skip the anagrams and/or leave immediately after the experiment without instructing future ingroup members and (b) despite participants knowing that their remuneration for participating in the experiment was fixed and could not be augmented by their efforts. Thus, highly identified participants engaged in selective primary control solely on behalf of their ingroup and not due to individual outcome considerations (i.e., to improve their personal standing). Additionally, from participants' comments during the debriefing session it was obvious that

being confronted with the anagrams (especially the 6-and-more-letter and the unsolvable anagrams) was a highly frustrating experience for most of them. The fact that highly identified participants in the pre-deadline condition nonetheless spent up to two minutes in trying to solve them therefore is even more an indicator of them being determined to engage in self-control on behalf of the group – instead of showing self-interest by skipping these anagrams and receiving their guaranteed remuneration. Taken together, the findings attest to the role of social identification moderating the relation between a group's deadline phase of action and engagement in selective primary control in terms of real behavior.

Studies 2-4 provided evidence that social identification moderates the impact of an action ecology in terms of a groups' deadline status on group members' self-control strategies by using scenario and quasi-minimal group paradigms. Specifically, in Studies 3 and 4 quasi-minimal groups were created, thus rendering high the internal validity of these studies. However, externally validating the control strategies at the group level requires them to be tested in real life contexts. To this points, contexts that show a different response of highly and lowly identified group members than the pattern suggested and found in the antecedent studies should have the same impact on the control strategies under investigation. The following study was conducted to show that this is indeed the case and to thus add to the validity of the control strategies by applying them to the intergroup situation of soccer team supporters.

2.5 Study 5

In all preceding studies, group members could personally and directly contribute to group goal striving in pre-deadline contexts by means of engaging in selective primary and secondary control. However, there are groups in which direct influence on group goal attainment is not possible. A prime example for such a group are soccer fans supporting their team.

In the literature a distinction between die-hard and fair-weather fans is made (Wann & Branscombe, 1990). Die-hard fans are more predisposed to display group-oriented behavior, while fair-weather fans are more likely to be opportunistic and to take an individual stance. In other words, die-hard fans can be expected to stick to their group and support it no matter what the circumstances for group goal attainment may be, while fair-weather fans are more likely to be susceptible to the actual action ecology (i.e., the respective context; Wann & Branscombe, 1990). Specifically Wann & Branscombe (1990) could show that the level of identification with a team moderated the degree to which individuals displayed BIRGing (i.e., basking-in-reflected-glory by increasing one's association with successful others) and CORFing (i.e., cutting-off-reflected-failure by increasing the distance between oneself and unsuccessful others; see also Snyder, Lassegard, & Ford, 1986) tendencies: Compared to lowly identified fans highly identified fans showed a) increased BIRGing tendencies and maintained their association with the team even when faced with defeat, and b) a reduction in CORFing tendencies. Lowly identified fans showed the strongest tendency to CORF, especially (but not exclusively) after defeat. The explanation provided by the authors is that the team is central to the identity of highly identified fans, who thus indicate movement towards the team (as indicated by BIRGing) independent of the team's outcome. Contrary, for lowly identified fans the team is not central to their identity and in turn they are less likely BIRG but more likely to move away from the team (as indicated by CORFing) in an instrumental manner based on the team's outcomes. It is important to note that CORFing may be regarded as structurally equivalent to compensatory secondary control and thus as a less costly strategy (involving protecting one's motivational resources and goal disengagement) more likely to

be displayed by lowly identified group members. Contrary, BIRGing is structurally equivalent to engagement processes and thus to the more taxing strategies of selective primary and secondary control (involving engagement and meta-motivational processes) more likely to be displayed by highly identified group members.

Even though not mentioned by the authors, these findings can also be explained by self-completion theory (Wicklund & Gollwitzer, 1982; see also Gollwitzer & Kirchhof, 1998). The theory applies the term *self-defining goal* to refer to individuals' ideal conceptions of themselves as possessing a readiness or potential to enact certain content-specific classes of behavior. If the self-defining goal is, for instance, to be a good fan, then the related activities involve cheering, clapping, and singing songs in support of the team as well as displaying the team's logo and colors. Self-completion theory states that whenever people strive for a self-defining goal and receive negative feedback, a sense of incompleteness arises that is addressed by compensatory efforts, for example by acquiring or displaying symbols relevant to the identity at stake (i.e., the compensation hypothesis). It further states that self-symbolizing that becomes a social fact is likely to be particularly effective in reducing a sense of incompleteness (i.e., the social reality hypothesis) and that self-symbolizing individuals' audience is regarded as serving the sole function of taking notice of their claim to possess the aspired identity (i.e., the social insensitivity hypothesis; see Gollwitzer & Kirchhof, 1998, for a detailed discussion and empirical evidence). Thus, for the die-hard fans displaying their commitment to the team in front of an audience (i.e., the other spectators) is an effective means to self-symbolize and claim their identity. A defeat of their team should not prevent them from engaging in activities such as mentioned above; rather more, due to the negative feedback the process should be further fueled.

As die-hard fans (who were found to stick to their group regardless of its chances, opportunities, and outcomes) are more highly identified with their soccer team than fair-weather fans (who were found to be susceptible to the actual action ecology), Wann and Branscombe's (1990) findings thus stand in contrast to this dissertation's findings. Thus, the most important reason why soccer fans as group supporters were chosen for the external validation of the control scales is that they can be expected to show a different pattern of

control strategy usage. By investigating the external validity of the control strategies in the context of soccer fans' team support (i.e., without direct influence on group goal attainment being possible) this study also goes beyond the previous studies in being set in a real life context.

On the one hand, investigating soccer team supporters poses a disadvantage as they do not directly determine the outcome of the match. There are two reasons why this may be considered a minor disadvantage. Firstly, perceived control is a more powerful predictor of functioning than actual control (e.g., Averill, 1973; Burger, 1989). Soccer fans may very well perceive a large degree of control in determining the outcome of their teams' performance ('the 12th man on the field'). For example, Strauß (1999) found that the majority of spectators of an American-football match in general and fans in particular believed that they could strongly influence the outcome of the game. Also, just as performers, spectators of sport events have been shown to experience 'momentum', defined as a mental state affecting performance in a positive way where everything seems to go right, too (Smisson, Burke, Joyner, Munkasy, & Blom, 2007). Secondly, fans can engage in behavior on behalf of their team, for example by being dressed and painted in their team's colors and logo, by cheering and booing, singing soccer chants, and more generally by taking the effort to travel and see the game. For example, Scheepers, Spears, Doosje, and Manstead (2003) found soccer team supporters to show different chants in reaction to either group-reinforcing or group-threatening situations, with both chants being discriminatory but serving different functions (namely an identity-confirming vs. an instrumental function, respectively).

On the other hand, investigating soccer team supporters offers the advantage of individual outcome considerations unlikely impacting on group-based self-control strategy usage. This is to say that soccer fans supporting their team will not support their team because they anticipate personal monetary benefits from their team being successful. A victory of their team will merely be of symbolic value, and this value pertains to their social but not their individual identity. Thus, choosing this setting excludes individual outcome considerations as an alternative explanation just as the experimental procedures in Studies 2

and 3.

Self-control strategy usage of soccer fans in supporting their team was examined at a highly critical point in time, namely during a pivotal soccer match decisive of the team staying in the second league versus descending to the regional league. More specifically, group-based self-control of FC Carl Zeiss Jena fans (the soccer team of the City of Jena) in the league-determining match against the MSV Duisburg (the opposing team) was investigated (the latter team being of equal status as indicated by almost the same amount of win of points during the ongoing soccer season). Thus, in terms of the action-phase model, this match more or less represents a critical transition point as captured by the conceptualization of the deadline (J. Heckhausen, 1999; J. Heckhausen & Schulz, 1995). Nonetheless, it is important to bear in mind that the deadline in this study is evidently weaker than in all preceding studies.

Following the reasoning and findings of Wann and Branscombe (1990), unlike in the previous studies, in the current study *moderate* levels of social identification are expected to moderate the impact of the perceived deadline status of the group on group-based self-control strategy usage, because the moderately identified (i.e., fair-weather) fans should be more susceptible to the current context. Highly identified (i.e., die-hard) fans are expected to engage in group-based self-control independent of how they perceive the deadline phase (in terms of opportunities) of their group to be.

2.5.1 Method

Design and participants

In a correlational study soccer team supporters' perception of their team's opportunities to reach the goal of remaining in the second league were assessed as a proxy for the group's deadline status. The perception of the deadline (i.e., of opportunities) served as a quasi-experimental factor. Furthermore, social identification with the soccer team was measured as the second continuous independent variable. A total of 115 visitors of the soccer match were recruited in front of the stadium and participated in this study for which

they received 2 € as compensation. Their mean age was 29 years (range 16 to 65) and 39 were female.

Procedure

In order to prevent open conflict between the two groups of team supporters, the groups are usually kept apart when entering the stadium in terms of there being an entrance for supporters of one team and a different entrance for supporters of the opposing team. Spectators waiting in line to enter the stadium at the Carl Zeiss Jena entrance were randomly approached with questionnaires by research assistants. This proved to be a successful strategy: all participants supported the local team. They were told that the study was a survey study pertaining to the domain of sport psychology. Next, participants filled in items measuring social identification, their perceived opportunities of the soccer team remaining in the second league, the self-control strategies, and socio-demographic information. Finally, participants were thanked, debriefed, and compensated.

Measures

Social identification. Identification with the FC Carl Zeiss Jena soccer team was assessed with seven items on a scale ranging from 1 (= *does not apply*) to 7 (= *completely applies*, e.g. “I identify with the FC Carl Zeiss Jena soccer team”, $\alpha = .89$).

Deadline perception. On a scale ranging from 1 (= *not at all*) to 7 (= *very much*) participants had to state on two items to what extent they believed that the group goal of remaining in the second league could still be attained (e.g., “To what extent do you think that the FC Carl Zeiss Jena soccer team has a chance of remaining in the second league this season?”). These items correlated in the expected manner, $r(114) = .66$, $p < .001$. They were thus summarized so that higher values indicate perceiving the group to have more opportunities to reach its goal (i.e., of the group being in a pre-deadline phase).

Control strategies. The group-based self-control scales used in the previous studies were administered. However, they were adapted to the context of the soccer match and the current group goal and for reasons of time constraints contained fewer items. Participants rated the extent to which each item applied to them personally on a scale ranging from 1 (=

does not apply) to 5 (= *completely applies*). *Selective primary control* (SPC; the first pre-deadline strategy) was assessed with four items (e.g., “I will show a lot of effort in supporting the FC Carl Zeiss Jena today”, $\alpha = .91$). *Selective secondary control* (SSC, the second pre-deadline strategy) was also assessed with four items (e.g., “During today’s match I will tell myself that we can make it”, $\alpha = .82$). Compared to the previous studies, *compensatory secondary control in terms of protection of motivational resources* (CSCprot; the first post-deadline strategy) was measured using fewer, namely only four, items (e.g., “If the FC Carl Zeiss Jena loses today I will remind myself that other soccer teams are off far worse than we are”, $\alpha = .64^5$). Finally, *Compensatory secondary control in terms of goal disengagement* (CSCdis; the second post-deadline strategy) was measured using two items (e.g., “Realizing that we can not attain our goal, I will give up that goal”, $r = .52$, $N = 115$, $p < .001$). Thus, compared to the previous studies (with the exception of Study 1) this strategy was also measured with fewer items.

2.5.2 Results

The relation between team supporters’ perception of their team’s deadline phase (i.e., the opportunities vs. constraints for the soccer team to remain in the second league) and the phase-congruent usage of control strategies was expected to be moderated by moderately identified group supporters (i.e., the fair-weather fans). Compared to highly identified group supporters (i.e., the die-hard fans), who were expected to stick with their group independent of its action ecology, they were assumed to be more susceptible to the perceived group’s deadline phase and thus to adequately engage in self-control strategy usage.

In order to investigate this moderating effect of social identification, separate multiple regression analyses for the control strategies were conducted using participants’ z-standardized scores of identification and the perception of the deadline, as well as the product between identification and deadline perception as predictors.

⁵ As noted before (see Study 1) the rather low reliability of this scale is most likely due to it being rather heterogeneous. J. Heckhausen et al. (2001, p. 408) report an alpha of .39 and point out that this scale comprises very different processes (e.g., self-protective attributions and self-serving social comparisons).

The regression analysis with the first pre-deadline strategy of selective primary control (SPC) as criterion variable revealed a significant main effect of deadline perception ($\beta = .22, p < .01$), pointing to stronger strategy usage with larger perceptions of opportunities (resembling a pre-deadline phase). There was also a significant main effect of identification ($\beta = .52, p < .001$), indicating stronger strategy usage with higher levels of identification. These main effects were qualified by the expected interaction between deadline perception and identification ($\beta = -.18, p < .05$). As predicted, simple slope analyses following Aiken and West (1991) indicated that for the moderately identified team supporters (i.e., the fair-weather fans) the more they perceived the soccer team to have opportunities for success (i.e., perceiving their group to be in pre-deadline phase), the more they reported engagement in this strategy ($\beta = .37, p < .001$). This relation was not found for highly identified team supporters, who reported a constantly high engagement in this strategy, independent of their deadline perceptions ($\beta = .06, p = .531$, see Figure 5).

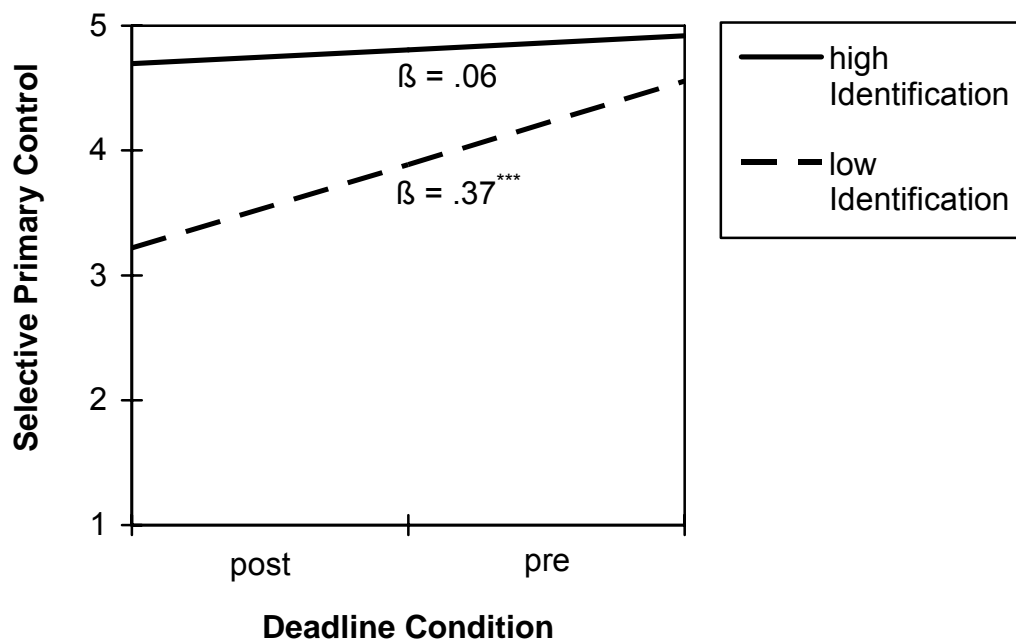


Figure 5. Selective primary control as a function of identification and deadline perception in Study 5. *** $p < .001$.

The regression with the second pre-deadline strategy (selective secondary control; SSC) as criterion variable also revealed a main effect of deadline perception ($\beta = .31$, $p < .001$) and a main effect of identification ($\beta = .37$, $p < .001$). Again, these main effects were qualified by the expected interaction of deadline phase and social identification ($\beta = -.18$, $p < .05$). In line with expectations, simple slopes indicated that moderately identified supporters reported engagement in this self-control strategy the more, the more they perceived their group to have chances of success ($\beta = .47$, $p < .001$). Highly identified supporters again showed a constantly high pattern of engagement, unaffected by perceived opportunities ($\beta = .15$, $p = .115$).

For the first post-deadline strategy of compensatory secondary control in terms of protection of motivational resources (CSCprot) neither main effects of perceived deadline-phase or identification, nor the expected interaction was found (all $|\beta| < .14$, all $ps > .16$). Hence, the hypothesis concerning this strategy was not confirmed. This was also the case for the second post-deadline strategy of compensatory secondary control in terms of goal disengagement (CSCdis). For this strategy merely a marginal effect of identification was found ($\beta = -.17$, $p = .090$; all other $|\beta| < .02$, all $ps > .84$), pointing to more disengagement from the group goal the lesser participants identified with the team.

Thus, overall, evidence for the expected moderation of the relation between perceived deadline phase and reports of control strategy usage by social identification in this study was limited to the pre-deadline self-control strategies, namely selective primary and selective secondary control.

2.5.3 Discussion

The results of this study support the hypothesis, albeit them being limited to the pre-deadline strategies: Moderately identified soccer team supporters (i.e., the fair-weather fans; Wann & Branscombe, 1990) adaptively reported engaging in actions on behalf of their group and in mental strategies to support group-goal striving according to their perception of the groups' action ecology. The findings thus attest to the validity of the

control strategy scales which were found to be valid in this context, and, more importantly, which were shown to be susceptible to this context in replicating the results of Wann and Branscombe (1990).

The reason results are limited to the pre-deadline strategies of selective primary and secondary control may be due to the fact that in this study there was no *de facto* deadline present or rather, that the deadline was much weaker than in previous studies. This is to say that even in the case of the soccer team loosing, there would still be a chance for the team to re-gain its league position in the next season and supporting the team would thus become even more important after failure. In fact, even though the soccer team did loose the match, it remained in the second league due to the poor performance of other soccer teams competing for a league position. Furthermore, the match had not taken place at the time of data collection – thus objectively for the soccer team this was still a pre-deadline phase. Supporting the argument of a weak deadline, the overall perception of the deadline (i.e., perceiving opportunities for success) in this study was extraordinarily high ($M = 5.73$, $SD = 1.12$, possible range 1 to 7). Given this perspective, disengaging from the group to real fans might have seemed too harsh a reaction as the deadline was not final, and as means of support continued to be effective. Most likely, team supporters will only disengage from the group goal when they are absolutely certain that further striving will not be beneficial. In Studies 3 and 4 it was experimentally made clear to half of the participants that the deadline had definitely passed. In the case of the current study, however, there was a 50/50 chance of the soccer team winning – thus rendering *a priori* disengagement unlikely. The more general point on how group deadlines (and consequently group-based post-deadline strategy usage) may differ from individual deadlines will be further explored in the General Discussion.

The highly identified soccer team supporters (i.e., the die-hard fans) showed engagement for their group independent of how they perceived its action ecology. Thus, in comparison to moderately identified fans, at first sight they acted in less instrumental ways. However, unlike membership in a minimal group (Studies 3 and 4) group membership for soccer fans is subjectively more important as it constitutes part of their enduring self-

definition. Hence, by behaving in ways that convey their internalization of group defining features they can ensure consensual validation of their social identity (Baumeister, 1982; Wicklund & Gollwitzer, 1982). From this perspective, for highly identified soccer fans' the desire to validate their social identity seems to have been stronger than the impact of the perceived action ecology. Engaging in behavior that helps to confirm one's social identity is particularly likely when these actions are under ingroup scrutiny (Noel, Wann, & Branscombe, 1995). Additionally, and in line with the current findings, Fielding and Hogg (2000) point out that behavior shown due to identity management motivation should be rather uninfluenced by perceived contingencies between one's behavior and the group outcome. This is another reason explaining the lack of findings concerning the post-deadline strategies of compensatory secondary control.

Validation of one's social identity may very well have had a stronger impact in this study compared to the previous studies. In Studies 1-4 an outgroup was only implicitly present (e.g., by it being mentioned in the instructions), and in Studies 2-4 there was neither direct competition between the groups nor were they negatively interdependent on each other. The current study, however, was set in the context of explicit intergroup competition in which one groups' gain is the other groups' loss, even at the fan level, not taking potential intergroup violence between fans into account. This may have led to a larger salience of group-membership (e.g., Worchel, Rothgerber, Day, Hart, & Butemeyer, 1998) and to the rather high levels of identification observed in this study ($M = 4.93$, $SD = 1.52$, possible range 1 to 7). Salience of group membership and high levels of identification in the current study may have provoked an exaggerated positive bias concerning the team's chances, as represented by the also overall high level of the deadline perception and the weak correlation between social identification and the perceived opportunities for success, $r(115) = .20$, $p < .05$. This may have rendered unlikely the usage of strategies implying disengagement from the group's goal (i.e., the post-deadline strategies of compensatory secondary control). In fact, such biased predictions of team performance have been identified as a coping strategy of sport fans (Wann, 2006). Specifically, in the sport science literature the tendency for highly identified fans to be overly optimistic concerning their team's future performance is referred to as allegiance bias, which, importantly, is present

even after stating rational explanations for the opposing team's victory (Markman & Hirt, 2002). This bias of highly identified fans comprises predictions of better futures for and performances of their team (e.g., Dietz-Uhler & Murrell 1999; Wann & Branscombe, 1993) and expectancies of greater success for individual team members (e.g., Murrell & Dietz, 1992). Such an optimistic ingroup bias has been found to result from heightened collective efficacy beliefs (Ouwerkerk & Ellemers, 2002). In an intergroup competition setting Ouwerkerk and Ellemers (2002) found that superior outgroup performance resulted in stronger collective efficacy beliefs when ingroup members nonetheless remained identified with their ingroup. Thus, under conditions of threatened social identity, stronger identification heightened collective efficacy beliefs for improvement of the situation. Identification and the perception of opportunities (i.e., of the deadline-phase) were correlated in this study. This speaks to the fact that most participants were positively biased in their assessment of the action ecology and thus unlikely to show post-deadline strategies of protection of motivational resources or goal disengagement to begin with. Whether this was indeed due to stronger efficacy beliefs, as the findings by Ouwerkerk and Ellemers (2002) suggest, should be addressed in future studies.

3 General Discussion

3.1 Overview and Discussion of the Presented Studies

The results of the current five studies suggest that the self-control strategies suggested by the life-span theory of control (J. Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996) and the action-phase model (J. Heckhausen, 1999) for pre- and post-deadline phases of individual goal pursuit also hold for the group level, where the social self is the agent of action. In the first of this dissertation's studies these group-based self-control strategies were shown to differ from the identity management strategies set forth by social identity theory (Tajfel & Turner, 1986): While identity management strategies are functional in terms of regulating one's social identity, the control strategies are functional in terms of group goal striving. As the identity management strategies of social and realistic competition convey the goal of being better than an outgroup, they were consequently shown to mediate the impact of a group's deadline phase on self-reported control strategy usage (thus indicating that the control strategies may serve as means for goals implied by these identity management strategies). Further attesting to the validity of the control strategies, Study 5 provided evidence that the control strategies are also valid in contexts for which results in contradiction to the assumptions of the action-phase model (J. Heckhausen, 1999) have been found. Specifically, Wann and Branscombe (1990) showed that so-called die-hard fans show engagement on behalf of their team regardless of its current standing while fair-weather fans were found to be more susceptible to the team's actual action context. This pattern of behavioral responses was replicated for self-reports of the pre-deadline control strategies, which indicates that the control strategies are also valid in contexts of sport team supporters rather than group members, where a direct influence on group goal attainment is not possible.

Studies 2-4 provided evidence for the focal hypothesis that the impact of a pre- vs. post-deadline action ecology in group goal striving on self-control strategy usage is moderated by social identification: The more group members identified with their group, the more adequately they reported engaging and actually engaged in self-control strategies

in line with their group's deadline phase. This applied to a broad range of natural (Study 2) as well as quasi-minimal laboratory groups (Studies 3 and 4), and for measured (Studies 2 and 4) as well as manipulated (Study 3) identification.

Furthermore, the results of Studies 3 and 4 ruled out the possibility that individual outcome considerations were driving the found effects, thus corroborating the argument that the social (and not the individual) self is the basis of self-control. In Study 3 group goal attainment only benefited future participants but not the participants taking part in the study. Consequently, they could not personally profit from their self-control. Differences in self-reported control strategy usage for highly identified participants were nonetheless found and these differences were in line with the deadline phase their group was confronted with. Thus, only highly identified individuals adequately indicated engaging in group-based self-control. Also preventing individual outcome considerations from having an impact, Study 4 extended these findings to behavioral measures of the most important pre-deadline strategy (i.e., selective primary control). It would be desirable for future research to also show effects for behavioral measures concerning the other control strategies. Concerning the individual level, such effects for selective secondary control (e.g., shielding the chosen goal off from alternative goals) have been demonstrated with an incidental recall paradigm (J. Heckhausen et al., 2001) which can also be applied to the current research.

The hypothesized effects were consistently found for goal engagement strategies. Specifically, a consistent pattern of results was found for the pre-deadline strategies of selective primary and secondary control, namely that the more individuals identified with the group, the more they engaged in these strategies provided their group was (or they perceived their group to be) in a pre-deadline phase. Contrary, the more participants were identified, the less they engaged in these strategies provided their group was (or they perceived it to be) in a post-deadline phase. However, the effects were less consistent for goal disengagement strategies of compensatory secondary control. Studies 2 and 3 provided evidence that the more participants identified with the group, the more they reported engaging in compensatory secondary control in terms of protection of motivational resources provided their group was in a post-deadline phase. The hypothesized effects for

compensatory secondary control in terms of goal disengagement were only found in an experimental setting (Study 3). The less consistent pattern concerning the post-deadline strategies might be due to the secondary nature of compensatory secondary control. These strategies are by definition self-focused strategies and might be less accessible to consciousness and self-report. Future research might investigate behavioral or automatic measures of compensatory secondary control (e.g., measuring the selection of social comparison targets via incidental recall) to test this proposition (cf. Wrosch & Heckhausen, 1999). Notwithstanding these methodological considerations, the pattern of the current findings raises the question of how and why post-deadline strategy usage may differ at the group compared to the individual level, where post-deadline strategy usage has been found more consistently. On the basis of the current findings, post-deadline strategy usage at the group level can be assumed to depend on the type of group goal and on the kind of deadline present.

On the one hand, group members are very unlikely to disengage from goals highly relevant to their social identification or defining their group per se (i.e., self-defining goals; Wicklund & Gollwitzer, 1982). This reasoning is corroborated by the dissertation's finding of effects for post-deadline strategies only for (externally imposed) task goals. In fact, direct behavioral involvement as indicator of an orientation toward the ingroup (e.g., participating in ingroup specific activities; Phinney, 1992; see also De la Garza, Newcomb, & Myers, 1995; Williams & Lawler, 2001) has elsewhere also been argued to constitute an element of social identity (Ashmore et al., 2004⁶). Overall, post-deadline strategy usage is thus unlikely to be found for group members pursuing goals directly pertaining to their social identity. In turn, this reasoning should also apply to the individual level: For self-defining individual goals, disengagement processes should be more difficult to detect. Future research, for example on developmental goals (J. Heckhausen et al., 2001), should thus take into account the importance of the goal pursued to the individual's self definition.

On the other hand, the action-phase model argues that deadlines are conditions

⁶ However, as Ashmore et al. (2004) rightly point out, such behavioral indicators need to be treated with caution, as they may serve several disparate goals (e.g., claiming identity, gaining entrance and acceptance) and may be influenced by factors other than identification (e.g., compliance).

representing a change from greater and richer to lesser and weaker opportunities (e.g., J. Heckhausen et al., 2001). Contrary to this rather gradient perspective, at the group level it appears that the deadline has to mark an absolute or irrevocable clear cut point in time after which chances of reaching the goal are completely eliminated. In accordance with this reasoning, effects of self-reported post-deadline strategy usage were only found when the deadline phase of the group was manipulated and, more importantly, when the deadline was operationalized in terms of time left (pre-deadline) or having run out (post-deadline) for reaching the group goal (Study 3). Furthermore, disengagement processes of the social self without unfavorable and irrevocable changes in the action ecology having passed may indeed be dysfunctional under certain conditions: Many social movements got started in disadvantageous contexts concerning group goal achievement, thus requiring their members to have high levels of perseverance.

Further research is needed to clarify whether identity constituting compared to more task specific goals and whether absolute compared to rather gradient group deadlines indeed differentially impact on group-based self-control strategy usage. Overall, however, disengagement processes seem to take place less likely at the group level.

At first sight the findings of Studies 2-4 that provided the ingroup is in a pre-deadline phase, highly identified individuals engaged in selective primary control might seem to contradict Ouwerkerk, de Gilder, and de Vries (2000). They found strength of social identification to have a positive impact on behavioral efforts on behalf of an ingroup – but only provided its current status was low; no such effects were found provided a high group status. However, unlike Ouwerkerk et al. (2000) Studies 2 to 4 did not investigate an instance of direct intergroup status competition: An outgroup was only implicitly mentioned (i.e., by the fact that participants knew a different perception style exists), status was not manipulated (nor did it differ naturally between the groups), and the groups were by no means negatively interdependent. Also, neither individual nor outgroup scores were made public. While Study 5 was set in a context of intergroup competition, the soccer teams did not differ in status (as indicated by their by equal amount of win of points during the season). In agreeing with Ouwerkerk et al.'s (2000) notion that a threat to group

members' social identity in intergroup relations marked by competition will fuel engagement on behalf of the ingroup to the degree that identification with the group is maintained, the current research could show that such engagement may also be present even in the absence of identity threat.

At the same time the findings that provided the ingroup is in a pre-deadline phase, highly identified individuals engaged in selective primary control is in line with a large range of social psychological research fields linking higher levels of identification to higher engagement on behalf of the group and its goals, provided a salient social self-categorization: group productivity (e.g., James & Greenberg, 1989; Ouwerkerk et al., 2000; Worchel et al., 1998; see also van Knippenberg, 2000), social loafing (e.g., Karau & Williams, 1993; Karau et al., 2000), commitment (for summaries see Doosje et al., 1999; Ouwerkerk, Ellemers, & de Gilder, 1999), crowd behavior (e.g., Reicher, 1984), collective action (e.g., Kelly, 1993; Simon & Klandermans, 2001; Stürmer & Simon, 2004; cf. also Wright, 2001), and organizational extra role and citizenship behavior (e.g., Abrams, Ando, & Hinkle, 1998; Ashforth & Mael, 1989; Haslam, 2001; for meta-analysis on organizational identification and work commitment cf. Ricketta, 2004, and Cooper-Hakim & Viswesvaran, 2005, respectively). In sum, what all these lines of research show is that the more individuals are identified with a group, the more likely they are to behave in accordance with their groups' norms, values, and goals.

The present results go beyond this research in providing evidence that the stronger individuals are identified with a group, the *less* engaged they are under the condition of a post-deadline phase of their group (Studies 2 and 3). Therefore, the current research extends the studies listed above which did not address the role of a group's action ecology and which would thus suggest that stronger identification always leads to stronger engagement.

3.2 Implications Related to Group-Based Self-Regulation

By investigating group-based self-control, the present findings add to the research addressing spontaneous group-based self-regulation coming forth (see Sassenberg & Wolpin, 2008, for an overview) in corroborating the argument that also the social self is the basis of self-regulation. Research focusing on the regulation of the social self has so far attended to the application of self-discrepancy theory (e.g. Bizman, Yinon, & Krotman, 2001; Petrocelli & Smith, 2005) and regulatory focus theory (e.g., Kessler et al., 2006; Sassenberg & Hansen, 2007; Sassenberg et al., 2003) to the social self. This dissertation adds on to this research in providing initial evidence that theories concerning individual controlled self-regulation (J. Heckhausen & Schulz, 1995; J. Heckhausen, 1999) can also be applied to the group level. This strengthens the assumption regarding the nature of self-regulation set forth by Smith (2002, p. 33) that “since self-regulatory systems ... operate at individual, relations, and group levels, this process should operate in conceptually the same way at each level.”

In order to judge whether and to what extent group-based self-regulation in general and group-based self-control in particular has been shown, Sassenberg and Wolpin (2008) have introduced four criteria, which were adopted from the criteria for truly group-based emotions set forth by Smith, Seger, and Mackie (2007). These criteria are: (1) ingroup variables should contribute to the effects of self-regulation beyond individual level variables, (2) the effects of self-regulation should be the more pronounced the more strongly a group member is identified with the group, (3) self-regulation should be functional for the group rather than for the individual, and should guide intra- and intergroup behavior, and (4) the effects of self-regulation should be socially shared within the group. Even though it would be desirable, this dissertation did not address all four criteria but only three (i.e., leaving out the social sharedness). However, not all four criteria have to be fulfilled in order to classify a finding as an effect of group-based self-regulation. Speaking to criterion 1, discrepancies between the desired and the current state of the respective ingroup had effects on behavioral intentions and behavior in terms of control strategy usage. Furthermore, by showing that the impact of the respective group's deadline

phase on self-control was moderated by social identification, the results also fulfill criterion 2. Finally, the functionality of self-control for the group rather than for the individual (i.e., criterion 3) was demonstrated in the studies eliminating individual outcome considerations, which ensured that only the ingroup, but not the individual group member, would benefit from self-control. It is thus justified to claim that the current studies indeed found evidence for truly controlled group-based self-regulation and that these studies thus strengthen the notion that group-based self-regulation exists as a phenomenon. Nonetheless, it would be desirable for future research on control strategy usage at the group level to also address the criterion of social sharedness.

In showing that adjacent to rather spontaneous effects of self-discrepancies and regulatory focus also controlled self-regulation effects at the group level can be found, this research provides the basis for taking an applied perspective aiming at interventions. At the individual level adequate and adaptive control strategy usage has been found to contribute to well-being (i.e., to less depressive symptoms, more positive and respectively less negative mood; J. Heckhausen et al., 2001; Wrosch et al., 2002). Thus, future research on self-control strategy usage at the group level should target these effects, too. Returning to the initial example of the political party member engaging in self-control strategies on behalf of the group goal to win the elections, such interventions may be designed to ensure group members' primary control potential (J. Heckhausen & Schulz, 1995). In pre-deadline phases, they would be directed at mobilizing group members or at keeping them "on track" when barriers and constraints threaten to erode motivation, whereas in post-deadline phases they should be directed at protecting group members' motivational resources for future goal pursuit or to encourage them in the processes of goal disengagement when faced with unattainable goals (Wrosch et al., 2003). As argued above, such interventions should in turn contribute not only to successful group goal striving, but also to group members' overall well-being.

3.3 Implications Related to the Control Strategies at the Group Level

Taken together, the results concerning the applicability of the self-control strategies suggested for individual level goal pursuit and deadlines extend earlier findings (e.g., J. Heckhausen et al., 2001; Wrosch & Heckhausen, 1999) to the group level and thus strengthen the notion that they also apply to the social self. However, some possible theoretical advancement for future research on group-based control strategy usage should be pointed out.

On a more conceptual level, future research should investigate additional control strategies specific to the group level. Compensatory primary control was not addressed in the current studies because the ingroup makes up the social self and as the social self is the basis for group-based self-control, investigating this strategy at the group level would be theoretically redundant. However, an additional aspect of selective primary control worthwhile exploring at the group level would be coordinating one's actions with other ingroup members in order to ensure optimal group goal pursuit (e.g., McGrath, Arrow, & Berdahl, 2000; Peterson & Behfar, 2005). Investigating group-based self-control specifically in an *intergroup* context would also further refine the strategies outlined by the action-phase model (J. Heckhausen, 1999). Group-goal striving in a context marked by competition and/or negative interdependence implies not only self-control in advancing one's group but might also imply hindering the outgroup. In line with this reasoning, Scheepers et al. (2003) could show that intergroup discrimination serves both an instrumental function and an identity confirmation function (see also Scheepers, Spears, Doosje, & Manstead, 2002). The instrumental function instigates action and operates especially when the ingroup is threatened, while the identity confirmation function operates especially in ingroup reinforcing situations. Direct hindering of an outgroup may be classified as a further aspect of selective primary control (i.e., investment of time and energy) at the group level, whereas verbally derogating it may serve as a function of selective secondary control (i.e., meta-motivationally supporting goal striving). These suggestions for future research point out further adaptations to the theorizing on individual level self-control when applying it to the group level.

Furthermore, like most research conducted within the social identity approach (e.g., Doosje, Ellemers, & Spears, 1995; Ellemers, Spears, & Doosje, 1997), participants' level of identification was treated as an independent variable in order to predict reactions to a given context. However, identification has also been investigated as dependent variable (e.g., Ellemers, 1993). Disidentifying from the group is a prime candidate for a further post-deadline strategy at the group level. Such changes in identification may take on the form of disidentifying with the category or of altering the importance attached to the social identity (Deaux, 1993).

Finally, to reach its full potential as research paradigm studying processes of self-control at the group level, longitudinal designs should trace the changes of group goal engagement and disengagement with the respective control strategies (for research at the individual level, see Haase, Heckhausen, & Köller, in press; J. Heckhausen & Tomasik, 2002; Wrosch et al., 2002). Longitudinal research would furthermore allow capturing the role of social identification as both cause and effect of self-control processes and add to the scarce research on dynamic identification processes in general (for an exception see, Doosje, Spears, & Ellemers, 2002). An example of such a research program would be investigating the interplay of identification and self-control strategy usage of political party members around election date deadlines.

3.4 Implications Related to Research Within the Social Identity Approach

In applying the action-phase model and the therein discussed control strategies to the group level, the social identity approach served as a theoretical basis for this dissertation. Consistent with this approach, group members strongly identified with their respective groups were found to be more willing to engage in adaptive self-control strategy usage on behalf of these groups and their goals than lowly identified group members. Theoretically this corroborates the argument that group identification renders behavior group-normative and encourages people to behave in line with group norms, values, and goals (e.g., Fielding & Hogg, 2000; Ouwerkerk et al. 1999; Tajfel & Turner, 1986). While earlier approaches on

engagement on behalf of the group (for overviews see Doosje et al. 1999; Ouwerkerk et al., 1999) have generally looked either at productivity measures (e.g., Worchel et al., 1998), at measures partially uncontrollable by the individual (e.g., turnover and absenteeism in organizational behavior; cf. Cooper-Hakim & Viswesvaran, 2005; see also Riketta, 2004), or at a rather global distinction between action and non-action in collective behavior (e.g., Wright, 2001) the current studies go beyond this research in investigating more fine-grained control strategies. The surplus resulting from the group-based self-control perspective pursued here is that it allows more specific predictions as it addresses the question *how* group members are striving for a goal when faced with advantageous or disadvantageous action ecologies such as marked by deadlines. As argued elsewhere (Sassenberg & Wolfin, 2008) this perspective, offering a process oriented motivational explanation, adds a further level of analysis to the prevailing need-based approaches to (inter-)group behavior, focusing on the content of motivation. These latter approaches have focused on the question *what* group members are striving for (e.g., gaining a positive social identity, Tajfel & Turner, 1979; reducing uncertainty, Hogg, 2007).

It should be pointed out that the role of (level of) identification needs to receive further attention in future research. The overall findings of the present studies point to levels of identification moderating the impact of the relation between a group's deadline phase of goal striving and adequate strategy usage. High identifiers thus showed instrumental and functional self-control responses to the action ecology directed at *group* level interest (Study 2 to 4), even if group level interest did not guarantee individual level self interest (Studies 3 and 4). Indirectly, this finding converges with work by Veenstra and Haslam (2000) showing that low identifiers are more likely to be concerned with group goals only if they are tightly aligned with their *individual* goals (see also Brandscombe, Ellemers, Spears, Doosje, 1999) and thus with evidence for a generally individualistic and instrumental approach of low compared with high identifiers (e.g., Doosje et al., 1995; Ellemers et al, 1997). For example, Doosje et al. (2002) found that lowly identified group members were less likely to form a basis for collective action (as expressed by group commitment and perceptions of group heterogeneity) when it was either unlikely that the group's status would change or when change was contingent on a concentrated group

effort. Contrary, highly identified group members were found to be less instrumental (in terms of *individual* interests) as they indicated being ready to create this basis not only when the status of the group could potentially change, but also even when change was very unlikely. Responses of lowly and highly identified group members did not differ when changes in the status structure were likely. These results also speak to the fact that under certain conditions high identifiers are willing to stick to the group through ‘thick and thin’ and, more important to the current reasoning, independent of future change perspectives concerning their group’s status (see also Ellemers et al., 1997).

Interestingly, in the study investigating soccer fans control strategy usage in support of their team (Study 5) this dissertation also found such a pattern, namely that highly identified participants showed a constantly high level of goal engagement strategies, regardless of their deadline perception (which also was unusually elevated). As noted above, this was explained by the weak deadline in this study, but also by the intergroup situation instigating a sense of urgency. In its original formulation the action-phase model (J. Heckhausen, 1999) further differentiates the pre-deadline phase in a nonurgent and an urgent phase of goal-oriented primary control striving. Increased levels of selective primary and secondary control are assumed for the urgent compared to the nonurgent phase. Thus, the results of Study 5 corroborate the action-phase model’s assumptions concerning the impact of urgency. Notwithstanding this argumentation, another reason why the deadline most likely did not have such a strong impact in Study 5 is that in the context of this study, selective primary control (i.e., supporting the team by cheering, displaying the team’s logo, etc.) still provided instrumentality (in the sense of claiming one’s identity as a team fan) even if the team lost.

Hence, the question emerging is: When are highly identified group members *not* and when *are* they affected in their group-serving considerations and behavior by changes in the action ecology (such as deadlines) impacting on opportunities to reach a group goal? A task for future research is to experimentally flesh out the conditions that lead high (compared to low) identifiers to ignore the functionality of control strategy usage and to stick to their group irrespective of its action ecology (i.e., deadline phase). Based on the

findings of Doosje et al. (2002) and the pattern of results in Study 5 identity threat (cf. Branscombe et al., 1999; see also Stephan & Stephan, 2000) seems to be a prime candidate.

Finally, this dissertation investigated how a group's objective or perceived action ecology in terms of deadlines for reaching a group goal impacts on group members' self-control strategy usage. As outlined above, a somewhat different approach to a group's action ecology was pursued in a series of studies investigating the impact of socio-structural variables as suggested by social identity theory (Tajfel & Turner, 1979). Specifically, Ellemers and colleagues (e.g., Ellemers et al., 1990; Ellemers et al., 1993; see also Ellemers, 1993) demonstrated how variables such as the permeability or group boundaries and the legitimacy and stability of group status influence group members' preferences for individualist or collectivist identity management strategies. Mummendey et al. (1999a, 1999b) extended these findings in their field studies to the natural context of East and West Germans. To the degree that in an intergroup setting stability of group status can be assumed to have an impact on a group's action ecology (given that the group goal is related to status improvement), the socio-structural variables may very well psychologically have a similar impact as group deadlines. Future research should thus be aimed at investigating their influence on group-based self-controls strategy usage.

3.5 Conclusion

The current research demonstrated that self-control strategies introduced for individual goal pursuit prior to and after having passed a deadline for reaching one's goal can be applied to the group level, where the social self is the agent of action. This corroborates the assumptions of the action-phase model and extends its applicability to the group level. The control strategies were further shown to serve a different function (namely group members' self-regulations in different phases of group goal pursuit) than the identity management strategies (which are functional in regulating group members' negative social identities and thus goal specific). This speaks to their specificity. Demonstrating the validity of the control strategies, they were found to provide the same pattern of results in a real life context as has been demonstrated by previous research. Most importantly, both measured and manipulated social identification was shown to moderate the impact of a group's deadline phase status on group members' self-control strategy usage. This relation was found to hold even if individual outcome considerations from group goal attainment were eliminated. In sum, this dissertation thus provides evidence corroborating argument that group-based self-regulation as a phenomenon indeed exists and that self-regulatory systems operate in conceptually the same way both at the individual and at the group level.

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Appendix

Indicators of the variables involved in this dissertation's studies are presented here for illustrative purposes. The German original formulation is indicated in parenthesis following each item. As the control strategies (adapted from Heckhausen et al., 1998) were adapted to the current context of the respective five studies (i.e., to the group goal in the respective situation), examples from Study 3 are provided because these items are formulated in the most general sense (i.e., referring to 'the goal' without naming it specifically). Social identification (most items taken from Luhtanen & Crocker, 1992) was assessed in Studies 2-5. The items provided below stem from Study 2 because in this study participants had to chose a group for themselves which required formulating the identification items in a general sense (i.e., referring to 'this group' without naming it specifically). The identity management strategies (taken from Mummendey et al., 1999a, and extended by several items) were only assessed in Study 1 and are also presented below, along with details pertaining to their measurement.

Control Strategies used in Study 3

The following strategies were assessed on a 5-point scale ranging from 1 (= *does not apply*) to 5 (= *completely applies*):

Selective Primary Control

While working on the 2. anagram task I will show a lot of effort. [Bei der Bearbeitung der 2. Anagram-Aufgabe werde ich keine Mühen scheuen]. (SPC1).

While working on the 2. anagram task I will put up with major efforts. [Bei der Bearbeitung der 2. Anagram-Aufgabe werde ich auch größere Anstrengungen in Kauf nehmen]. (SPC2).

While working on the 2. anagram task I will not hesitate for long but instead will contribute to our group goal. [Bei der Bearbeitung der 2. Anagram-Aufgabe werde ich nicht lange zögern, sondern etwas für unser Gruppenziel tun]. (SPC3).

While working on the 2. anagram task I will do my very best so that we may attain our group goal. [Bei der Bearbeitung der 2. Anagram-Aufgabe werde ich alles dran setzen, dass wir das Gruppenziel erreichen]. (SPC4).

While working on the 2. anagram task I will really kick off. [Bei der Bearbeitung der 2. Anagram-Aufgabe werde ich gleich richtig loslegen]. (SPC5).

Selective Secondary Control

While working on the 2. anagram task I will tell myself that we can make it if only we really want to. [Bei der Bearbeitung der 2. Anagram-Aufgabe werde ich denken: Wir können es bestimmt schaffen, wenn wir nur wollen]. (SSC1).

While working on the 2. anagram task I will remind myself how important the goal is for my group. [Bei der Bearbeitung der 2. Anagram-Aufgabe werde ich daran denken, wie wichtig das Ziel für meine Gruppe ist]. (SSC2).

While working on the 2. anagram task I will remind myself how happy I will be if we as a group have success. [Bei der Bearbeitung der 2. Anagram-Aufgabe werde ich daran denken, dass ich froh sein werde, wenn wir als Gruppe Erfolg haben]. (SSC3).

While working on the 2. anagram task I will avoid any other thoughts that could distract me. [Bei der Bearbeitung der 2. Anagram-Aufgabe werde ich mir alles was mich ablenken könnte aus dem Kopf schlagen]. (SSC4).

While working on the 2. anagram task I will remind myself how proud I will be if we attain the group goal. [Bei der Bearbeitung der 2. Anagram-Aufgabe werde ich daran denken, wie stolz ich sein werde, wenn wir das Gruppenziel erreicht haben]. (SSC5).

Compensatory Secondary Control in terms of Protection of Motivational Resources

While working on the 2. anagram task I will think about justifications in order not to blame myself in case of failure. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich nach Begründungen suchen, um mir nicht selbst die Schuld bei Misserfolg geben zu müssen]. (CSCprot1).

While working on the 2. anagram task I will search for reasons in order to justify to myself experiences of failure. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich nach Erklärungen suchen, um mich bei Misserfolg vor mir selbst zu rechtfertigen]. (CSCprot2).

While working on the 2. anagram task I will think of good arguments why our failure can not be my fault. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich nach guten Argumenten dafür suchen, dass ein Misserfolg nicht an mir liegt]. (CSCprot3).

While working on the 2. anagram task I will think: The other group most probably is not doing better, either. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich denken: Die andere Gruppe ist bestimmt auch nicht erfolgreicher]. (CSCprot4).

While working on the 2. anagram task I will think: The other group most probably is doing even worse than we are. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich denken: Die andere Gruppe ist bestimmt noch viel schlechter als wir]. (CSCprot5).

While working on the 2. anagram task I will think: Compared to the other group we are probably still doing fine. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich denken: Verglichen mit der anderen Gruppe stehen wir bestimmt trotzdem gut da]. (CSCprot6).

While working on the 2. anagram task I will think: My group is probably very good at other tasks. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich denken: Bei anderen Aufgaben ist meine Gruppe bestimmt ganz gut]. (CSCprot7).

While working on the 2. anagram task I will think: It just is not the case that we always fail. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich denken: Es ist ja nicht so, dass wir immer versagen]. (CSCprot8).

While working on the 2. anagram task I will think: On the sentence completion task we were doing very well. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich denken: In der Satz-Ergänzungsaufgabe waren wir ganz erfolgreich]. (CSCprot9).

Compensatory Secondary Control in terms of Goal Disengagement

While working on the 2. anagram task I will tell myself that I can easily disengage from the group goal. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich mir sagen, dass es mir leicht fällt, mich vom Gruppenziel zu lösen]. (CSCdis1).

While working on the 2. anagram task I will tell myself that the group goal of reaching a certain amount of points is nonsense. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich mir sagen, dass das Gruppenziel eine bestimmte Punktzahl zu erreichen Quatsch ist]. (CSCdis2).

While working on the 2. anagram task I will think: I will not further pursue this issue. [Während der Bearbeitung der 2. Anagram-Aufgabe werde ich denken: Ich verfolge diese Sache nicht weiter]. (CSCdis3).

Social Identification Items used in Study 2

The following items were assessed on a 7-point scale ranging from 1 (= *do not apply*) to 7 (= *completely applies*):

I identify with this group. [Ich identifiziere mich mit dieser Gruppe]. (ID1).

I feel responsible for what happens to other group members. [Ich fühle mich mitverantwortlich für das, was den anderen Gruppenmitgliedern geschieht]. (ID2).

Generally speaking I am glad to be a member of this group. [Im Allgemeinen bin ich froh ein Mitglied dieser Gruppe zu sein]. (ID3).

I am affected by things happening to other group members. [Ich fühle mich betroffen, wenn den anderen Gruppenmitgliedern etwas geschieht]. (ID4).

I see myself as a member of this group. [Ich sehe mich selbst als Mitglied dieser Gruppe]. (ID5).

I feel strong ties with the other group members. [Ich fühle eine starke Verbundenheit mit den anderen Gruppenmitgliedern]. (ID6).

Me being a member of this group reflects on who I am. [Die Tatsache, dass ich ein Mitglied dieser Gruppe bin spiegelt sehr gut wider, wer ich bin]. (ID7).

Generally speaking I have a very good opinion concerning us group members. [Ich selbst habe im Allgemeinen eine gute Meinung von uns Gruppenmitgliedern]. (ID8).

Identity Management Strategies used in Study 1

The following three strategies (i.e., individual mobility, social competition, and realistic competition) were assessed on a 5-point scale ranging from 1 (= *do not agree at all*) to 5 (= *completely agree*):

Individual Mobility

In case of no success in the Excellence Initiative it would be attractive for me to change to a different university. [Wenn die FSU Jena keinen Erfolg in der Exzellenzinitiative hat, wäre es für mich attraktiv, die Hochschule zu wechseln]. (Ind. Mob.1).

In case of no success in the Excellence Initiative it would be my very own wish to belong to a different university. [Bei ausbleibendem Erfolg der FSU Jena in Sachen Exzellenzinitiative wäre es mein eigener Wunsch, einer anderen Hochschule anzugehören]. (Ind. Mob.2).

In case of no success in the Excellence Initiative I could imagine changing to a different, better university. [Falls die FSU Jena keinen Erfolg bei der Exzellenzinitiative hat, könnte ich mir vorstellen, an eine andere, bessere Universität zu wechseln]. (Ind. Mob.3).

Social Competition

We from the FSU Jena will show other universities that we are much more qualified for receiving funding by the Excellence Initiative. [Wir von der FSU Jena werden anderen Universitäten zeigen, dass unsere Uni eher für eine Förderung durch die Exzellenzinitiative geeignet ist]. (Soc. Comp.1).

We from the FSU Jena will soon show other universities that we outperform them in terms of initiative and engagement concerning the Excellence Initiative. [Wir von der FSU Jena werden andere Universitäten schon bald an Initiative und Engagement hinsichtlich der Exzellenzinitiative übertroffen haben]. (Soc. Comp.2).

We from the FSU Jena should work hard on gaining a better reputation than other universities. [Wir von der FSU Jena sollten uns dafür anstrengen einen besseren Ruf als andere Universitäten zu haben]. (Soc. Comp.3).

Realistic Competition

When the funding within the Excellence Initiative is distributed in a few months, we from the FSU Jena should make sure that this funding is granted to us rather than to other universities. [Bei der Vergabe der Fördermittel im Rahmen der Exzellenzinitiative in wenigen Monaten sollten wir von der FSU Jena dafür sorgen, dass diese Fördermittel eher an uns als an andere Universitäten vergeben werden]. (Real. Comp.1).

When the funding of the Excellence Initiative is distributed in a few months, we from the FSU Jena should take good care that the bulk of this funding is granted to us rather than to other universities. [Wenn in den kommenden Monaten Fördermittel im Rahmen der Exzellenzinitiative verteilt werden sollten wir von der FSU Jena alles daran setzen, einen Großteil dieser Mittel zu erhalten]. (Real. Comp.2).

Other universities have already received a lot of investment; we from the FSU Jena have to fight in order to make sure that in the future, such funding is given to us rather than to other universities. [In andere Universitäten ist bereits sehr viel investiert worden; wir von der FSU Jena müssen darum kämpfen, dass in der Zukunft Fördermittel vor allem an unsere Universität gehen]. (Real. Comp.3).

Reevaluation of Comparison Dimension

With respect to the funding dimension, the strategy of reevaluation was formed by the following items, assessed on a 5-point scale ranging from 1 (= *of no importance*) to 5 (= *very important*).

Please indicate how important according to your opinion as member of the FSU Jena the following dimensions are:

- (a) The *amount of acquired funding* (meaning money the institutes of the FSU have gained for their achievements in science – including possible funding by the Excellence Initiative). (Reeval.1)
- (b) The *sociability* (meaning the social climate at the FSU Jena – including relations to other students, tutors, professors etc.). (Reeval.2)
- (c) The *quality of teaching* (meaning overall factors contributing to the quality of seminars – including amount of seminars offered, didactics, and equipment). (Reeval.3)
- (d) The *possibilities of self-realization* at the university (meaning in how far the university offers opportunities for pursuing different interests over the course of ones studies – including student organizations, sport teams, interest groups etc.). (Reeval.4)

The maximum difference between (a) and (b) to (d) was defined to indicate the devaluation of the dimension of acquired funding.

Preference for Temporal Comparisons

This strategy was measured by a single indicator, the difference between the following items, assessed on a 5-point scale ranging from 1 (= *of no importance*) to 5 (= *very important*):

- (a) How important is the comparison of the FSU Jena's reputation today compared to prior to the Excellence Initiative to you? (Pref. Temp.1)
- (b) How important is the comparison between the FSU Jena and other universities applying for the Excellence Initiative to you? (Pref. Temp.2).

Summary

This dissertation addressed controlled self-regulation at the group level and thus group-based self-control. Research addressing group-based self-regulation has mainly focused on effects of self-discrepancies (Higgins, 1987) and of regulatory focus (Higgins, 1997) and provided evidence that group-based self-regulation as a phenomenon exists (for an overview see Sassenberg & Woltin, 2008). However, to date group members' controlled self-regulation serving group goals in terms of specific behavioral and mental strategies has not been investigated. Rather more, the focus in intergroup research has been on investigating identity management strategies (Tajfel & Turner, 1979) serving the regulation of individuals' negative social identity (e.g. Blanz et al., 1998; Hogg & Abrams, 1988). To address the above mentioned research gap, the current thesis draws on the action-phase model of developmental regulation, describing pre- and post-deadline self-control strategies in individual pursuit of developmental goals (J. Heckhausen, 1999). This model is applied to the group level by combining it with the social identity approach (e.g., Tajfel & Turner, 1979; Turner et al., 1987). Research conducted within this approach has demonstrated that under conditions of a salient group membership, group members are likely to behave in accordance with group goals and norms. Furthermore, research on group-based self-regulation has found effects to be pronounced more strongly, the more group members are identified with their respective group (cf. Sassenberg & Woltin, 2008). Consequently it is hypothesized that for members of groups facing a deadline as defined by the action-phase model, higher levels of social identification will lead to more adequate (i.e., deadline phase-congruent) control strategy usage and thus to higher levels of group-based self-control.

The first study was conducted to explore the relation between the identity management strategies and the control strategies. In line with expectations, the two social identity management strategies of social and realistic competition were found to mediate the impact of the perceived opportunities for group goal attainment (i.e., between the perceived pre- vs. post-deadline phase of the group) on the pre-deadline control strategies. Thus, Study 1 clarified the relation between the two types of strategies: While the social

identity management strategies specify a goal (i.e., being better than an outgroup) and are functional in terms of regulating individuals' negative social identities, the self-control strategies serve as a means to attain group goals in general; they are hence functional in terms of group goal pursuit in different deadline phases (pre vs. post).

The moderating role of social identification was tested in a scenario experiment (Study 2) using different natural groups and in two laboratory experiments (Study 3 and 4), in which quasi-minimal groups were created. Study 2 manipulated the group's deadline phase (pre vs. post) and measured social identification. Support for the hypothesis was obtained for the most efficient pre- and post-deadline self-control strategies. In Study 3 both deadline phase and social identification were manipulated and results in line with the hypothesis were obtained for all control strategies investigated. Finally, Study 4 manipulated deadline phase and measured social identification and demonstrated that the results also hold for behavioral measures. Overall, in line with the hypothesis across all three studies especially highly identified individuals adequately selected and applied the control strategies, even when individual outcome considerations from the group reaching its goal were eliminated (Studies 3 and 4).

In order to validate the control strategies in a field setting for which results in contrast to this dissertation's findings have been demonstrated, Study 5 investigated soccer team supporters' control strategy usage during a pivotal soccer match decisive for the league status of the soccer team. This match thus represented a 'natural' deadline. Wann and Branscombe (1990) found highly identified soccer team supporters (so-called 'die-hard fans') to support their team no matter how they perceive the team's chances of success to be. Contrary, moderately identified supporters (so-called 'fair-weather fans') were found to be more susceptible to the team's action ecology. Consequently, the pattern of results was hypothesized to flip in this study. In line with this reasoning and thus validating the control strategies, results indicated that highly identified supporters showed self-control on behalf of their group regardless of what they perceived the opportunities of their team to be like (and thus regardless of the perceived group deadline phase). Contrary, the moderately identified supporters showed the expected pattern. However, results were limited to the pre-

deadline strategies, most probably due to the fact that the match did not resemble a clear cut and final deadline, thus rendering post-deadline strategy usage unlikely.

Summing up, the current thesis demonstrated that self-control strategies for individual goal pursuit prior to and after having passed a deadline for reaching one's goal can also be applied to the group level, where the social self is the agent of action. Thus, it corroborates the assumptions of the action-phase model (J. Heckhausen, 1999) in extending it to the group level. Also, these strategies were shown to function as means of goals implied by social identity management strategies (Tajfel & Turner, 1979) – and therefore to be different from them. Furthermore, social identification moderated the impact of a group's deadline phase on group members' self-control strategy usage. The findings thus also strengthen the notion that group-based self-regulation exists as a phenomenon (see Sassenberg & Woltin, 2008, for an overview) and that self-regulatory systems operate in conceptually the same way at both individual and group levels (Smith, 2002).

Zusammenfassung

In der vorliegenden Dissertation wurde kontrollierte Selbstregulation auf der Gruppenebene und somit gruppenbasierte Selbstregulation untersucht. Bisherige Forschung die sich mit gruppenbasierter Selbstregulation beschäftigt hat, konzentrierte sich vor allem auf die Effekte von Selbst-Diskrepanzen (Higgins, 1987) und vom Regulatorischen Fokus (Higgins, 1997) und konnte Belege dafür finden, dass gruppenbasierte Selbstregulation als Phänomen in der Tat existiert (für eine Übersicht siehe Sassenberg & Woltin, 2008). Nichtsdestotrotz wurde bisher nicht untersucht, inwiefern Gruppenmitglieder kontrollierte Selbstregulation im Dienst von Gruppenzielen durch spezifische verhaltensmäßige oder mentale Strategien betreiben. Stattdessen lag der Fokus der Intergruppenforschung zumeist auf der Untersuchung von Identitätsmanagement Strategien (Tajfel & Turner, 1979), die Individuen nutzen, um eine negative soziale Identität zu regulieren (z.B. Blanz et al., 1998; Hogg & Abrams, 1988). Die vorliegende Dissertation befasst sich mit der oben erwähnten Forschungslücke. Hierzu wurde das Handlungsphasenmodell der Entwicklungsregulation (J. Heckhausen, 1999), das unterschiedliche Selbstkontrollstrategien in prä- und post-Deadline Phasen von individueller Entwicklungszielverfolgung beschreibt, auf die Gruppenebene angewandt und mit dem Ansatz der sozialen Identität (z.B. Tajfel & Turner, 1979; Turner et al., 1987) verbunden. Forschung innerhalb dieses Ansatzes konnte zeigen, dass sich Gruppenmitglieder unter der Bedingung einer salienten Gruppenmitgliedschaft in Übereinstimmung mit Gruppenzielen und -normen verhalten. Außerdem belegt Forschung zu gruppenbasierter Selbstregulation, dass die Effekte umso stärker sind, je mehr Gruppenmitglieder mit ihrer jeweiligen Gruppe identifiziert sind. Demzufolge wird in dieser Dissertation folgende Hypothese aufgestellt und getestet: Gruppenmitglieder, die mit einer Deadline (wie durch das Handlungsphasenmodell definiert) konfrontiert sind, werden umso adäquater und stärker phasen-kongruente Selbstkontrollstrategien auswählen und anwenden, je stärker sie sich mit ihrer Gruppe identifizieren.

Die erste Studie dieser Dissertation wurde durchgeführt, um die Beziehung zwischen den Identitätsmanagement Strategien und den Kontrollstrategien zu erforschen.

Erwartungsgemäß weisen die Befunde darauf hin, dass die Identitätsmanagement Strategien sozialer und realistischer Wettbewerb den Einfluss der wahrgenommenen Möglichkeiten für die Erreichung des Gruppenziels (d.h. zwischen der wahrgenommenen prä- vs. post-Deadline Phase der Gruppe) auf die prä-Deadline Kontrollstrategien medieren. Insofern klärt die erste Studie die Beziehung zwischen diesen beiden Arten von Strategien auf: Während die Identitätsmanagement Strategien ein Ziel spezifizieren (nämlich besser zu sein als eine Fremdgruppe) und funktional im Sinne einer Regulation von negativer sozialer Identität sind, dienen Selbstkontrollstrategien generell als Mittel um Gruppenziele zu erreichen; das heißt sie sind funktional im Sinne einer Gruppenzielverfolgung in unterschiedlichen Deadline Phasen (prä vs. post).

Der moderierende Einfluss der sozialen Identifikation wurde mit unterschiedlichen natürlichen Gruppen in einer Szenario-Studie (Studie 2) und mit im Labor erzeugten quasi-minimalen Gruppen (Studien 3 und 4) untersucht. In Studie 2 wurde die Deadline Phase der Gruppe (prä vs. post) manipuliert und die Identifikation mit der Gruppe gemessen. Die Ergebnisse bestätigten die Hypothese, waren aber auf die effizientesten prä- und post-Deadline Strategien beschränkt. In Studie 3 wurden neben der Deadline Phase auch die Identifikation manipuliert. Die Befunde bestätigten die Hypothese für alle untersuchten Kontrollstrategien. Schließlich wurde in Studie 4 die Deadline Phase manipuliert und die Identifikation gemessen. In dieser Studie konnten die Befunde auch für Verhaltensmaße einer Selbstkontrollstrategie repliziert werden. Insgesamt wurde entsprechend der Hypothese in allen drei Studien gezeigt, dass vor allem hoch identifizierte Gruppenmitglieder Deadline Phasen adäquate Selbstkontrollstrategien auswählen und anwenden, selbst wenn individueller Profit durch das Erreichen des Gruppenziels als alternative Motivationsquelle ausgeschlossen wurde (Studien 3 und 4).

Um die Selbstkontrollstrategien in einem Kontext zu validieren, für den Befunde konträr zu den Befunden dieser Dissertation vorliegen, wurde in Studie 5 der Einsatz der Selbstkontrollstrategien durch Fußballfans (also Unterstützer einer Gruppe) während eines Spiels untersucht, das entscheidend für den Verbleib des Teams in der Zweiten Liga war. Dieses Spiel markierte somit eine ‚natürliche Deadline‘. Wann und Branscombe (1990)

konnten zeigen, dass hoch identifizierte Fußballfans (so genannte ‚die-hard‘ Fans) ihr Team unabhängig von ihrer Wahrnehmung der Möglichkeiten eines Sieges unterstützen. Dem gegenüber zeigten sich moderat identifizierte Fußballfans (so genannte ‚fair-weather‘ Fans) stärker durch tatsächlich gegebene Möglichkeiten im Handlungsspielraum des Teams beeinflusst. Dementsprechend wurde für diese Studie erwartet, dass sich das Muster der Ergebnisse umkehren würde. Im Einklang mit dieser Hypothese weisen die Ergebnisse darauf hin, dass hoch identifizierte Fans Selbstkontrollstrategien unabhängig von ihrer Wahrnehmung der Möglichkeiten des Teams nutzen (und somit unabhängig von der wahrgenommenen Deadline-Phase der Gruppe). Dem gegenüber zeigten moderat identifizierte Fans das erwartete Muster in ihrer Nutzung der Selbstkontrollstrategien. Allerdings waren die Befunde auf die prä-Deadline Strategien beschränkt, was vermutlich der Tatsache geschuldet ist, dass das Spiel keine absolute und finale Deadline darstellte und somit eine post-Deadline Strategie-Nutzung unwahrscheinlich machte.

Zusammenfassend zeigt die vorliegende Dissertation auf, dass die Selbstkontrollstrategien für eine individuelle Zielverfolgung vor und nach einer Deadline zur Zielerreichung auch auf die Gruppenebene angewandt werden können, wo das soziale Selbst das Agens der Handlung ist. Somit bekräftigen die Befunde die Annahmen des Handlungsphasenmodells (J. Heckhausen, 1999), indem sie es für die Gruppenebene erweitern. Ferner wurde gezeigt, dass die Selbstkontrollstrategien als Mittel für Ziele genutzt werden, die durch die Identitätsmanagement Strategien (Tajfel & Turner, 1979) impliziert werden – und somit, dass sie sich von ihnen unterscheiden. Außerdem moderierte die soziale Identifikation den Einfluss der Deadline Phase einer Gruppe auf die Selbstkontrollstrategienutzung von Gruppenmitgliedern. Die Befunde bekräftigen somit auch die Annahme, dass gruppenbasierte Selbstregulation als Phänomen existiert (vgl. Sassenberg & Woltin, 2008) und dass Systeme der Selbstregulation konzeptuell in gleicher Weise auf der individuellen wie auch auf der Gruppenebene wirken (Smith, 2002).

Curriculum Vitae

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Universitäten

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April 2002 - Aug. 2005	Hauptstudium Psychologie (Diplom), Friedrich-Schiller-Universität Jena
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Ehrenwörtliche Erklärung

Ich erkläre hiermit, dass mir die Promotionsordnung der Fakultät für Sozial- und Verhaltenswissenschaften bekannt ist.

Ferner erkläre ich, dass ich die vorliegende Arbeit selbst und ohne unzulässige Hilfe Dritter angefertigt habe. Alle von mir benutzten Hilfsmittel, persönliche Mitteilungen und Quellen sind in der Arbeit angegeben.

Bei der Datenerhebung haben mich Nadine Hauthal, Susan Salzbrenner, Maria Klaus und Florian Müller in ihrer Funktion als studentische Hilfskräfte unterstützt. Weitere Personen waren an der Erstellung der Arbeit nicht beteiligt.

Insbesondere habe ich nicht die Hilfe eines Promotionsberaters in Anspruch genommen und Dritte haben weder unmittelbar noch mittelbar geldwerte Leistungen von mir für Arbeiten erhalten, die im Zusammenhang mit dem Inhalt der vorgelegten Dissertation stehen.

Die vorliegende Dissertation wurde weder im In- noch im Ausland in gleicher oder ähnlicher Form bei einer anderen staatlichen oder wissenschaftlichen Prüfungsbehörde eingereicht. Weder früher noch gegenwärtig habe ich an einer anderen Hochschule eine Dissertation eingereicht.

Ich versichere, dass ich nach bestem Wissen die reine Wahrheit gesagt und nichts verschwiegen habe.

Ort, Datum

Unterschrift